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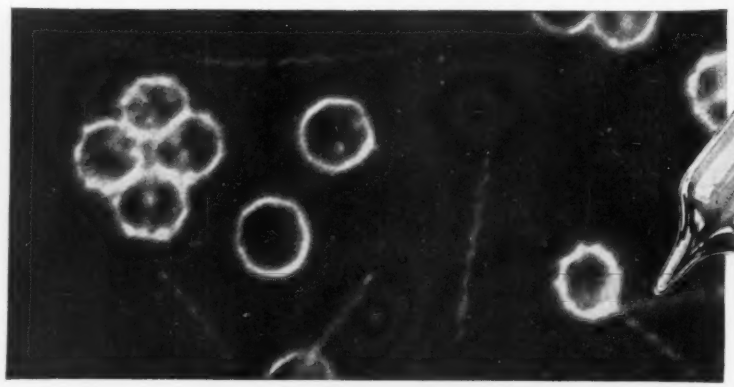
1. *early institution of treatment*
2. *adequate dosage*



Treponema pallidum: unretouched photomicrograph of fresh human chancre exudate, under darkfield illumination; some red blood cells apparent.

The statistical studies of Padget* have been of considerable value in establishing the need for treating primary syphilis during the seronegative stage. Under the best conditions obtainable, the syphilitic patient has less chance of being cured when treatment is delayed until the blood becomes seropositive than he has if therapy is instituted while it still is seronegative. Furthermore, the incidence of neurosyphilis has been found to be more than twice as high in seropositive primary syphilis cases than in any other.

Inadequate dosage of Neoarsphenamine will only lead to progression and extension of the syphilitic lesions. Low dosage will neither eradicate the infection nor permit the host to develop natural resistance to it. The incidence of infectious recurrence will be reduced to a minimum if treatment is continuous rather than intermittent, and provided that during the selected course of treatment, the patient at no time is without the influence of either Neoarsphenamine or Bismuth.

The first three months of treatment are most important in preventing future relapse. Negative serologic reactions do not necessarily indicate noninfectiousness; hence, patients should not be permitted to relax precautions or suspend therapy until the proper number of alternating, uninterrupted courses of Neoarsphenamine Merck and Bismuth Subsalicylate have been given.

**Padget, P., Long-term results in treatment of early syphilis, J. A. M. A. 116:7-11, 1941.*

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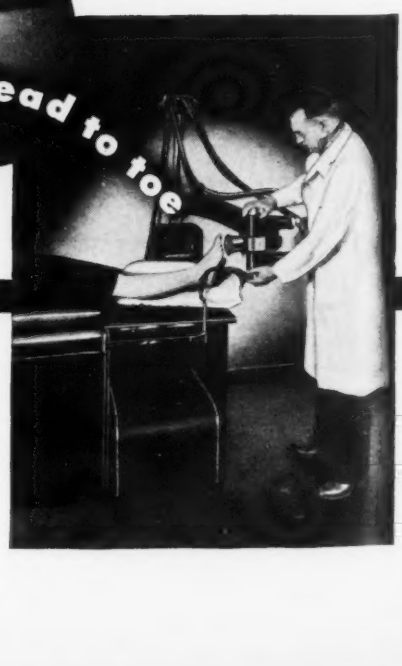

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Archives of Dermatology and Syphilology

VOLUME 50 AUGUST 1944 NUMBER 2

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CONTACT TESTING OF THE BUCCAL MUCOUS MEMBRANE FOR STOMATITIS VENENATA

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CINCINNATI
AND
CAPTAIN BERNARD GOLDMAN
DENTAL CORPS, ARMY OF THE UNITED STATES

Many investigators [1] have noted the low incidence of contact stomatitis as compared with the high incidence of contact dermatitis. Moreover, it is uncommon for a patient with extensive contact dermatitis of the face and even with a contact cheilitis to have an associated contact stomatitis. Furthermore, persons may take medicaments by mouth and may acquire extensive vesicular dermatitis, with positive reactions to patch tests, but often with no apparent lesions of the mucous membranes. Some examples of these substances are quinine, sulfathiazole and poison ivy oleoresin. This clinical fact of the relative resistance of the buccal mucous membrane to the development of eczematous lesions has not been studied in great detail.

Among the detailed reports in the literature of stomatitis venenata have been those of Shelmire [2] and Silvers [3] on poison ivy, Bircher [4] on primula obconica, Loveman [5] on oil of anise, Rattner [6] on dental plate material with special reference to hecolite, Weaver [7] on dentures and Templeton and Lundsford [8] on hexylresorcinol. Some other materials, reported on in less detail, have been other essential oils, asparagus, chewing gum, phenolic resins, tooth brush handles and lipstick dyes and even cotton plugs.[9] As Rattner [6] indicated, interest should be focused on the increasing use of plastics for dental materials, since many plastics are excellent cutaneous sensitizing materials. The more commonly used dental plastics at present are the methyl methacrylate resins (acrylics). Foulger [10] has stated that he knows of no proved cases of "sensitivity stomatitis from methacrylate resins." Schwartz [11] has reported a case of dermatitis of the hands in a dentist who prepared a denture from polymerized methyl methacrylate dissolved in unpolymerized methacrylate. One of the most interesting recent reports of contact stomatitis has been

* From the Department of Dermatology and Syphilology of the College of Medicine of the University of Cincinnati.

1. Sulzberger, M. B.: Dermatologic Allergy, Springfield, Ill., Charles C Thomas, Publisher, 1940, p. 92.

2. Shelmire, B.: Contact Dermatitis from Weeds: Patch Testing with Their Oleoresins, J. A. M. A. **113**:1085 (Sept. 16) 1939.

3. Silvers, S. H.: Stomatitis Venenata and Dermatitis of the Anal Orifice from Chewing Poison Ivy Leaves (Rhus Toxicodendron), J. A. M. A. **116**:2257 (May 17) 1941.

4. Bircher, cited by Zinsser, F.: Hautkrankheiten und Mundschleimhaut, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1930.

5. Loveman, A. B.: Stomatitis Venenata: Report of a Case of Sensitivity of the Mucous Membranes and the Skin to Oil of Anise, Arch. Dermat. & Syph. **37**: 70 (Jan.) 1938.

6. Rattner, H.: Stomatitis Due to Sensitization to Dental Plates, J. A. M. A. **106**:2230 (June 27) 1936; Lesions of Mouth from Sensitization to Base Plate Material, J. Am. Dent. A. **23**:1519 (Aug.) 1936.

7. Weaver, W. L.: Case of Stomatitis Due to Sensitivity to Dental Plates, Virginia M. Monthly **63**: 636 (Jan.) 1937.

8. Templeton, H. J., and Lunsford, C. J.: Cheilitis and Stomatitis from ST37 Tooth Paste, Arch. Dermat. & Syph. **25**:439 (March) 1932.

9. Becker, S. W., and Obermayer, M. E.: Modern Dermatology and Syphilology, Philadelphia, J. B. Lippincott Company, 1940, p. 554. Stokes, J. H.: Fundamentals of Medical Dermatology, Philadelphia, Department of Dermatology Book Fund, 1942, p. 497. Silvers, S. H.: Stomatitis and Dermatitis Venenata with Purpura Resulting from Oil of Cloves and Oil of Cassia, Dent. Items Interest **61**:649 (July) 1939. Prinz, H., and Greenbaum, S. S.: Diseases of the Mouth and Their Treatment, Philadelphia, Lea & Febiger, 1935, p. 106. McCarthy, F. P.; Healy, J. C., and Daley, F. H.: A Clinical and Pathological Demonstration of Oral Lesions, exhibit at the Ninetieth Annual Session of the American Medical Association, Atlantic City, N. J., June 1937.

10. Foulger, J. H.: Personal communication to the authors.

11. Schwartz, L. H., cited by Foulger.[10]

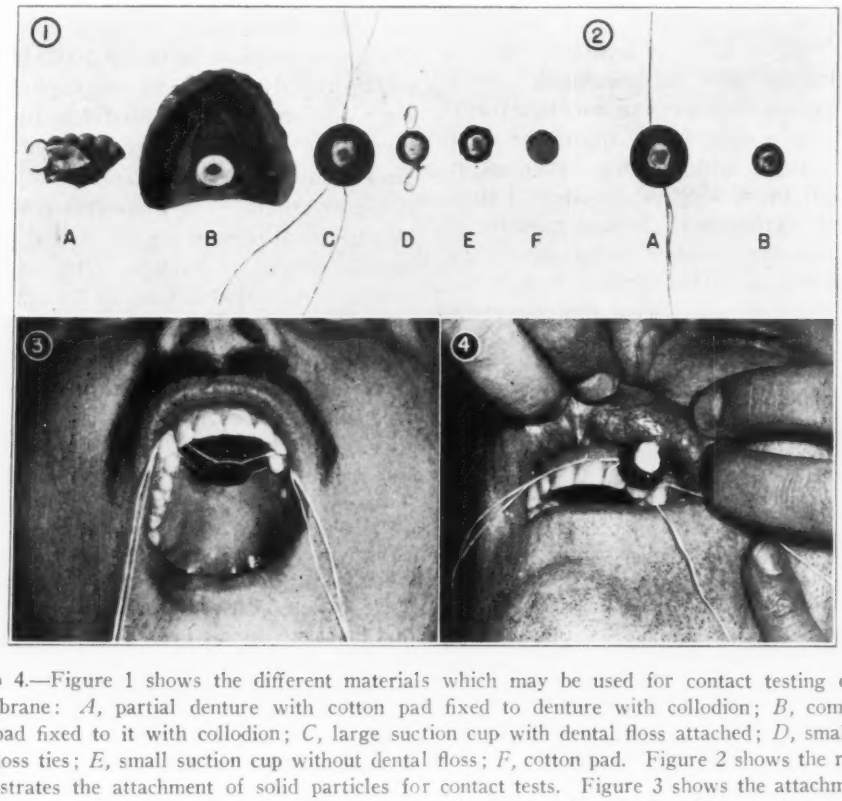
that of Deissler and Sheets[12] about a patient who was sensitive to a metallic denture made of ticonium, an alloy of nickel, cobalt, chromium, molybdenum and beryllium. The patient also had a positive reaction to a contact test with nickel (metal?) on her palate. This case report is important because it suggests the possibility of cutaneous sensitization from these new alloys, which are being used not only in dentistry but in surgical repair of bone. Some mucous membrane reactions to drugs such as phenobarbital and phenolphthalein appear to represent endogenous drug allergy and not contact allergy, although in some cases they may be of mixed type, as in the case of bromoderma mucosae reported by Bloch and Tenchio.[13] Many of the diagnoses of contact stomatitis in the literature were proved by flare-up reactions following local use of the suspected material and many by the reaction of the skin to a patch test. In only relatively few cases were attempts made to test the mucous membrane directly.

The following are some of the suggestions which have been offered to explain this relative infrequency of contact stomatitis:

1. The period of actual contact with the surface of the buccal mucous membrane is brief. This does not hold true, of course, for many dental appliances.

2. The saliva has a tremendous influence, mechanically and chemically. The mechanical actions include dilution, rapid removal of the potential eczematogenic agent by salivary flow and lubricating action (mouth oil) on the buccal surface to prevent breaks in the mucous membrane barrier. The chemical action of the saliva may affect the irritant agent by buffering, neutralization or adsorption.

3. The anatomic structure of the buccal mucous membrane permits rapid dispersion of the irritant when it is absorbed and tends to keep it away from the cells of the epidermis. This rapid removal is accomplished by the character of the epidermal cells, the fact that there is a corneous layer only in certain portions covering the alveolar process and hard palate, the thinness of the epi-



Figs. 1 to 4.—Figure 1 shows the different materials which may be used for contact testing of the buccal mucous membrane: *A*, partial denture with cotton pad fixed to denture with collodion; *B*, complete denture with cotton pad fixed to it with collodion; *C*, large suction cup with dental floss attached; *D*, small suction cup with dental floss ties; *E*, small suction cup without dental floss; *F*, cotton pad. Figure 2 shows the rubber suction cups and illustrates the attachment of solid particles for contact tests. Figure 3 shows the attachment for large rubber suction cup to hard palate. Figure 4 illustrates the attachment of a small rubber suction cup for contact testing of the labial mucous membrane. The lip may be inspected easily.

12. Deissler, K. J., and Sheets, G. R.: Contact Stomatitis Due to a Denture in a Metal Sensitive Patient, California & West. Med. **57**:354 (Dec.) 1942.

13. Bloch, B., and Tenchio, F.: Zur Klinik und Pathogenese des Bromoderma vegetans, Arch. f. Dermat. u. Syph. **165**:93, 1932.

thelial covering, the pronounced development of papillae and the extensive vascularization especially in the labial area.

At present, the time factor of contact, externally and internally, of the agent with the epidermal cells of the mucous membrane seems to us to be the most likely reason for failure of sensitization in the average person. For the hypersensitive patient, as usual, the time of contact needs be only short. These are all theoretic assumptions, and much investigative work is needed to attempt to explain the uncommonness of stomatitis venenata.

For some years we have been interested in methods of actual contact testing of the mucous membrane of the mouth and have tried the following types:

1. Direct application—such as repeated painting with merthiolate on the same area of the hard palate;
2. Cotton roll—soaking dental cotton roll with solution to be tested and holding roll under the lip;
3. With denture as vehicle—fastening of thin bit of cotton on denture with collodion and then applying agent to cotton;
4. With partial denture as vehicle—same technic as above;
5. Holding material in mouth with finger;
6. Rubber suction cup technic;
7. Clinical flare-up reaction—the actual use in the mouth of material or materials suspected.

The method which we selected as the most practical one was the rubber suction cup technic. We chose soft black rubber suction cups such as are used to fasten display advertisements by suction to surfaces. These are shaped more like a saucer than a cup. These appliances are approximately 1.0 cm. high, 2.5 cm. in diameter across the top and approximately 0.7 cm. in diameter at the bottom of the bowl with a cup approximately 0.15 cm. in depth. The under side of the saucer has a stand 0.2 cm. in thickness and 1.2 cm. in diameter. The overhanging edge of this rest produces a groove 0.1 cm. around. For work under the lips this rubber suction apparatus may be cut down to a diameter 1.2 to 1.4 cm. In these days of rubber shortage a somewhat more uncomfortable cup may be made from an ordinary hard rubber faucet washer 1.8 cm. in diameter and 0.5 cm. thick. In the central depression area a small bit of collodion is placed and then a piece of cotton packed on top so that the depression is filled. Then the material to be tested, if liquid, paste or cream, is dropped on the cotton. If small bits of denture or metal are to be tested, they are secured to the cotton by collodion. Dental floss is used to tie the suction cups in place when such fixation is desired. The dental floss is tied around the tooth to the right and to the left of the suction cup at a distance to make it taut. The floss is passed around the tooth from the anterior surface above the cingulum and tied securely in place. A blunt instrument may be used to push the dental floss above the cingulum. This fixation is desirable to prevent slipping of the cup. Occasionally it may be necessary to loop it twice around the teeth. The simple instruction for dentists is to tie it in as one would tie a rubber dam. We still are uncertain about the ideal time of contact. We have had positive reactions in as little as five minutes of contact with the labial mucous membrane. With this type of fixation the appliance may be left for hours. As yet, we have left none on overnight. Our average contact time at present is twenty to thirty minutes. With negative results, a longer period of contact can be used. With fixation of the suction cup to the upper teeth, the inner labial surface can be examined from time to time by simply turning up the lip. The reactions are recorded as I, simple erythema; II, erythema-edema, which is the most common; III, erythema-edema-ulceration (vesiculation not usually seen), and IV, necrosis. The advantages of the rubber suction cup are: simplicity, comfort, provision for minimum dilution of the agent by saliva, production of a reaction localized to the area of testing, providing for the application of multiple tests at the same time and, in labial testing, allowance for frequent inspections of the tested area, allowance for flexibility of the time-contact factor and safety (since the large cup for palatal testing is too large to be swallowed easily and the small labial testing cup may be spit out if it slips).

TABLE 1.—*Reactions in Cases of Contact Stomatitis*

Agent	Number of Cases	Positive Patch Test	Positive Contact Mucous Membrane Test
Tooth paste (three brands)	4	3 (one not done)	3 (one not done)
Plate cleaner	1	1	1
Oil of lavender	1	1	1
Cashew nut oil	1	1	Not done
Mercury	1	1	1
Pecan nut	1	Not done	Not done
Tobacco	1	0	0

We have collected data in 10 cases of contact stomatitis distributed as shown in table 1.

We have had no patients with stomatitis from dentures. Five control patients without dermatitis or stomatitis had both patch tests and mucous membrane tests with acrylic resins and also with vulcanite, and the reactions of these few patients were negative. With the stomatitis from tooth paste the diagnosis was made chiefly by elimina-

tion of the tooth paste. We have started control studies to determine if tooth pastes are primary irritants when they remain in contact with mucous membranes for twenty to thirty minutes. The three positive reactions to patch tests with the two brands tested were maculopapular with considerable edema but no vesicles, and these reactions resembled the irritant type of reactions from soaps. This is not surprising since the general formula of tooth paste includes an abrasive (type?), glycerin, water, a flavoring agent and a detergent. We had no case such as those described by Templeton and Lunsford,[8] in which the tooth paste was merely a vehicle for an active chemical agent. It is extremely difficult to get the formula of popular brands of tooth pastes and to determine whether such stomatitis is eczematogenic or irritant. Much work remains to be done on this problem. The same problem arose in the case of stomatitis from plate cleaner. The formula[14] was as follows: trisodium phosphate 25 per cent, sodium carbonate 72 per cent, tricalcium phosphate 3 per cent and methyl salicylate 0.03 per cent. Methyl salicylate in a patch test elicited a negative reaction. From a clinical standpoint, at least, relief of this stomatitis from the tooth pastes and denture cleaner was obtained with elimination of the suspected material. The physician with the tobacco stomatitis (from only one particular brand) had tests with saline suspensions of the tobacco in question. The pecan nut stomatitis occurred in a patient with atopic dermatitis and bilateral cataracts. The patients with cashew nut oil and mercury stomatitis had also both cheilitis venenata and dermatitis venenata about the chin and distant lesions on the body interpreted as ids. The mercury stomatitis was unusual because the patient was sensitive to mercury by contact. He had warned the dentist about his sensitivity to mercury when the dentist was preparing an amalgam restoration. A severe stomatitis developed shortly after the amalgam was used. Because minute amounts of mercury are said[15] to be found in the mouths of patients with amalgams, a peculiar chronic recurrent gingivitis which this patient had later, at times complicated by a fusospirillar infection, was suspected of being due to mercury and the amalgams were removed. With removal of these and measures for the control of the infection the patient had decided improvement.

Markow[16] has recently reported a case of generalized urticaria proved to be due to the mercury of an amalgam filling. Although the reaction to a patch test with mercury bichloride was negative, metallic mercury rubbed on the arm produced urticaria. A mixed mercury filling held (with his finger) against the roof of this patient's mouth for an hour produced some local burning and raw feeling (but no local lesions?) and generalized urticaria. Results of passive transfer tests were negative. It is interesting that the same patient had had a previous contact dermatitis with positive reactions to patch tests with nickel, aluminum chloride and dress dyes. Duke[17] has also mentioned positive patch reactions to amalgam filling and told of the removal of an amalgam filling as being "followed by a serious general reaction to mercury that caused the patient to refuse further treatment." These cases, then, prove that mercury from an amalgam filling can react locally and systemically in persons who are unusually sensitive to mercury.

TABLE 2.—*Results of Mucous Membrane Tests*

Contact Agent	Number of Cases	Positive Patch Test	Mucous Membrane Test	
			Positive	Negative
Nickel	6	6	4	2
Rhus toxicodendron	10	10 (high dilution)	2 (after dermatitis subsided)	8
Procaine hydrochloride	2	2	1	1
Mercury	2	2	0	2
Lipstick	2	2	0	2
Sulfathiazole	3	3	0	3 (no cutaneous reactions followed)

As another study, routine mucous membrane testing was done on a small series of patients with contact dermatitis (table 2). None of the patients had stomatitis at the time or previously had ever had such reactions.

Practically all these mucous membrane tests were made with the time factor of only twenty to thirty minutes. At the present time studies are being made to determine the relationship of the time contact factor to the negative reaction. The most interesting group of potential contact stomatitis cases is, of course, the nickel-sensitive group. The 2 patients who had negative mucous membrane reactions also did not react to the nickel coin test on the skin. In our experience, reaction to a nickel coin indicates a high degree of sensitivity to the metal. Because of the pos-

14. Ward's Dental Plate Cleaner, Montgomery Ward, Chicago, 1944.

15. Souder, W., and Sweeney, W. T.: Is Mercury Poisonous in Dental Amalgam Restorations? Dent. Cosmos **73**:1145 (Dec.) 1931.

16. Markow, H.: Urticaria Following Dental Silver Filling, New York State J. Med. **43**:1648 (Sept. 1) 1943.

17. Duke, W. W., in discussion on Fungus Allergy, J. Allergy **11**:318 (March) 1940.

sible use of metallic dentures with alloys containing nickel these tests do have some practical value. In 2 patients focal cutaneous reactions developed after the mucous membrane reactions. Such focal reactions should be possible also, as Deissler and Sheets have stated, if such alloys were used in surgical procedures on the bones of these nickel-sensitive patients. The rhus toxicodendron group is also important because of the increasing popularity of oral poison ivy antigen therapy. In a series of only 12 adults without poison ivy dermatitis, with routine patch and mucous membrane tests with 1:25 ivy antigen, 2 patients had positive patch tests and negative mucous membrane tests and 1 patient had a small aphtha-like ulcer area which appeared twenty-four hours after the mucous membrane test. No mucous membrane tests were made on children. In the poison ivy prevention series of one of us (L. G.) there has been only 1 patient with a mild transient labial stomatitis from the use of ivy oleoresin in corn oil and 1 patient who acquired a severe stomatitis and glossitis from chewing poison ivy leaves. So far, not a single case of stomatitis has developed in patients taking tablets containing poison ivy oleoresin. It is possible that with refinement in the technic of mucous membrane testing more cases of potential contact stomatitis to poison ivy oleoresin will be detected. Shelmire has expressed the belief that such mucous membrane sensitivity to poison ivy is not as uncommon as has been supposed. Of the 2 patients with dermatitis from procaine hydrochloride, a positive reaction was obtained only in the patient who gave a history of redness and burning following injections of the drug in the mouth. With the relatively small number of patients on whom we have done mucous membrane testing, as yet we have not seen a severe primary irritant reaction. Of the materials which we have used, the tooth pastes may have given mild primary irritant reactions. The cashew nut oil was not tested on the mucous membrane, but the patch test was strongly positive. Without a greater number of tests and without microscopic sections, we cannot define clearly these borderline eczematogenic-irritant reactions.

The clinical picture of contact stomatitis as we have seen it is a variable one. The lesions include such diverse types as simple localized erythematous areas and extensive ulcerative patches. One patient with stomatitis from tooth paste had two reddened slightly atrophic areas at the gingivolabial border of each side of the upper lip. Focal flare-up reactions in these areas were produced by contact with the tooth paste in question and also with a mucous membrane contact test in another area. The commonest type of mucous membrane reactions was, however, the erythema-edema type. Study of the normal structure of the mucous membrane over the hard palate and the lips was made, but histologic sections of the stomatitis areas or of positive reactions were not examined. The history is important for the diagnosis of contact stomatitis because of the occurrence of such subjective reactions as pain and burning and because of the appearance of lesions after a variable period of contact with the suspected material. Also, the improvement should follow removal of the agent. Although the possibility of secondary infection in a dirty mouth is great, we have observed no instances of secondary infection in any of our clinical patients or of positive reactions to patch tests. Positive reactions have been found also in elderly patients and in patients with edentulous mouths. It is possible that such factors as avitaminosis, hypochlorhydria and the like may be predisposing factors. One of our clinical patients with stomatitis venenata had cholelithiasis with hypochlorhydria, and 1 other patient had hpyochlorhydria, without any definite cause. Some of the cases in the literature have also included such systemic factors.

As we have stated, as yet we cannot differentiate clearly between a mild slow-developing irritative stomatitis and contact allergic stomatitis. Usually contact stomatitis is associated with contact cutaneous allergy, actual or potential. A clearer understanding of the technic of contact mucous membrane testing may help to distinguish these two forms of stomatitis. Electrogalvanic stomatitis [18] may be differentiated by the location of the stomatitis in relationship to fillings, by the feeling of electric shock in the extreme cases, by the sensitive microgalvanometer readings and by the negative reactions to a mucous membrane contact test and patch tests. Stomatitis medicamentosa, such as that due to phenobarbital and to phenolphthalein, may be difficult to recognize if the cutaneous phase is not prominent. Save for sulfathiazole and phenobarbital we have had no experiences with contact mucous membrane testing with drugs. Infectious and systemic stomatitides should be differentiated in the usual manner.

As a rule, no local therapy is necessary, since elimination is the most important factor. For mercury-sensitive persons it is important to remember Duke's [17] warning in regard to severe reactions produced by the removal of the amalgams. For nickel-sensitive persons, alloys

18. Lain, E. S.: Clinical and Electrolytic Lesions of the Mouth Caused by Artificial Dentures, Arch. Dermat. & Syph. **25**:21 (Jan.) 1932.

containing cobalt should also be avoided. Ticonium and vitallium are materials for dentures which should not be used for nickel-sensitive persons. Perhaps the metal, tantalum, may be used in such cases. For temporary protection, the denture may be covered with eugenol paste, as Deissler and Sheets [12] have recommended. To assist in healing, nicotinamide may help. If secondary infection can be proved, the usual measures to treat this should be used. In certain persons subjective reactions of burning and pain may continue after the stomatitis is relieved. Parenteral administration of vitamins and avoidance of the usual oral irritants, smoking, hot drinks, alcohol, spices and the like, may be recommended. Psychotherapy may be necessary also.

To assist the dermatologist the following list of the more common substances used in modern dentistry is offered [19]:

A. For nonmetallic dentures
   1. Methyl methacrylate resins
   2. Acrylic styrene resins
   3. Acrylic vinylacetate resins
   4. Cellulose compounds
   5. Rubber compounds (vulcanites)

B. For coloring materials of dental plastics
   1. Iron oxide
   2. Madder lake
   3. Cadmium red
   4. Titanium oxide
   5. Vermilion

C. For metallic dentures
   1. Ticonium—nickel, cobalt, chromium, molybdenum and beryllium
   2. Vitallium—cobalt, chromium, molybdenum
   3. Tantalum
   4. Gold—alloys with nickel and cobalt
   5. Iridioplatinum alloys

D. Miscellaneous
   1. Impression compounds
   2. Waxes
   3. Gold alloys
   4. Zinc phosphate cements
   5. Silicate cements
   6. Porcelain—baked porcelain restorations and artificial teeth
   7. Amalgams
      a. Silver amalgams — silver, tin, copper, zinc and mercury
      b. Copper amalgams (in children's teeth mostly)
   8. Tooth powders — abrasives, detergents, flavoring agents
   9. Tooth paste — glycerin, water, abrasives, detergents, flavoring agents
   10. Zinc oxide and eugenal paste
   11. Plaster of paris
   12. Theobroma oil (cocoa butter)

19. Souder, W., Principal Physicist, National Bureau of Standards: Personal communications to the authors. Sweeney, W. T.; Paffenberger, G. C., and Beall, J. R.: Acrylic Resins for Dentures, J. Am. Dent. A. **29**:7 (Jan.) 1942. List of Certified Dental Materials, ibid. **31**:126 (Jan.) 1944.

CONCLUSIONS

By means of a rubber suction cup technic, standardized contact testing of the buccal mucous membrane may be done as an aid in the diagnosis of stomatitis venenata. The best time period of contact has not been determined as yet. Most of our experiments have been made with only twenty to thirty minutes of contact, and positive reactions have been obtained. With this technic it has been shown that persons sensitive to nickel may also have hypersensitivity of the buccal mucosa. This is important for the possible future use in these persons of metallic dentures with alloys containing nickel or even cobalt. In a small series of controls, contact testing of mucous membranes with poison ivy oleoresin did not show a significant number of reactions. No definite cause for the apparent rarity of contact stomatitis is offered, but contact testing of mucous membranes will reveal that this form of contact allergy is more common than has been thought previously.

ICHTHYOSIFORM ATROPHY OF THE SKIN IN HODGKIN'S DISEASE

REPORT OF A CASE, WITH REFERENCE TO VITAMIN A METABOLISM

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The cutaneous lesions which accompany Hodgkin's disease present varying pictures and may precede, accompany or sometimes follow the general manifestations.

According to Cole [1] the most common cutaneous manifestation is pruritus. Next most common is a prurigo-like exanthem. There are accompanying excoriations, scars and areas of pigmentation and swelling. Urticaria is not infrequent, and purpuric lesions have been described.

Wechselmann [2] and others reported a diffuse exfoliating erythroderma. It is considered a rare occurrence.

Fraser [3] described an eruption, preceded by generalized pruritus, on the back, chest and shins of a man aged 65. The lesions were round or oval reddened scaly areas with well defined borders, measuring 1 to 3 cm. by 5 cm.

Small reddish or bluish tumors containing serosanguineous fluid have been termed "lymphogranulomatosis cutis" by Grosz.[4]

Ziegler [5] made the statement that in 25 per cent of all cases there is found some cutaneous involvement if it is searched for.

Cole,[1] in a study of 33 cases of lymphadenoma, found involvement of the skin in 13. He classified all the cutaneous changes into two groups:

(*a*) True lymphogranulomatosis cutis.

(*b*) Lesions resulting from a generalized systemic disturbance. Their histologic picture, in contradistinction to that of the first group, is not characteristic and is variable.

Trophic changes, consisting of dryness of the skin, atrophy, hyperkeratosis and alopecia, are seen frequently. Ronchese [6] has described such a case. An ichthyosiform atrophy with hyperkeratosis developed in a patient with Hodgkin's disease while he was in apparently good health, eleven months before his death. The changes were widespread and took only six weeks to develop. The cutaneous surface was made of rhomboidal scales with flaky edges, such as are seen in mild ichthyosis or in senile ichthyosis. Biopsy showed atrophy of the skin and hyperkeratosis, with no evidence of the type of infiltration that occurs in Hodgkin's disease. Similar changes were found in a patient seen by us.

REPORT OF CASE

A fisherman aged 39 was admitted to the hospital complaining of scaliness of his skin. Apart from an attack of cerebrospinal meningitis twelve years ago, he had previously enjoyed good health. For some months before his present illness he had noticed night blindness; it took half an hour after he left his house at night for his eyes to become accustomed to the darkness. His diet had been good. He had also been vaguely aware of a painless lump in his left armpit during the same period. His skin had been healthy.

Nine weeks before admission his scalp hair and eyebrows commenced to fall out and his heels, wrists and knees felt itchy. These symptoms were accompanied by an attack of sickness, shivering, sweating and malaise which lasted for fourteen days.

He returned to work but fell sick nine days before admission with a similar attack, this time accompanied by jaundice and dark urine. The yellowness had begun to disappear just before admission.

On examination the patient showed a faint tinge of jaundice. There was a rubbery enlarged lymph node in the left axilla. The smooth, firm liver was easily palpable 3 inches (7.6 cm.) below the costal margin. The spleen was not clinically enlarged. The scalp hair was thin and falling and almost absent around the sides of the head, being thicker over the vertex. The eyebrows and eyelashes had disappeared. No characteristic changes were seen in the eyes or the tongue. There was a generalized ichthyosiform atrophy of the

From the Department of Clinical Medicine and the Polish School of Medicine, Edinburgh, Scotland.

1. Cole, H. N.: Cutaneous Manifestations of Hodgkins Disease, J. A. M. A. **69**:341 (Aug. 4) 1917.

2. Wechselmann: Ueber Erythrodermia exfoliativa universalis pseudoleukaemica, Arch. f. Dermat. u. Syph. **87**:205, 1907.

3. Fraser, J. F.: Cutaneous Manifestations in Hodgkin's Disease, Arch. Dermat. & Syph. **46**:587 (Oct.); 769 (Nov.) 1942.

4. Grosz: Beitr. z. path. Anat. u. z. allg. Path, **39**: 1906.

5. Ziegler, K.: Die Hodgkinsche Krankheit, Jena, Gustav Fischer, 1911.

6. Ronchese, F.: Ichthyosiform Atrophy of the Skin in Hodgkins' Disease, Arch. Dermat. & Syph. **47**:778 (June) 1943.

entire skin. On the soles localized areas of hyperkeratosis were heaped up to form excrescences, having some resemblance to a gonococcic keratosis. The finger nails were smooth and polished but showed alternating light and dark areas, giving them a curious striped appearance. This striation was not seen in the toe nails (figs. 1, 2, 3 and 4). A dermatologist who saw the eruption could scarcely believe that it was of recent origin, so great were the changes.

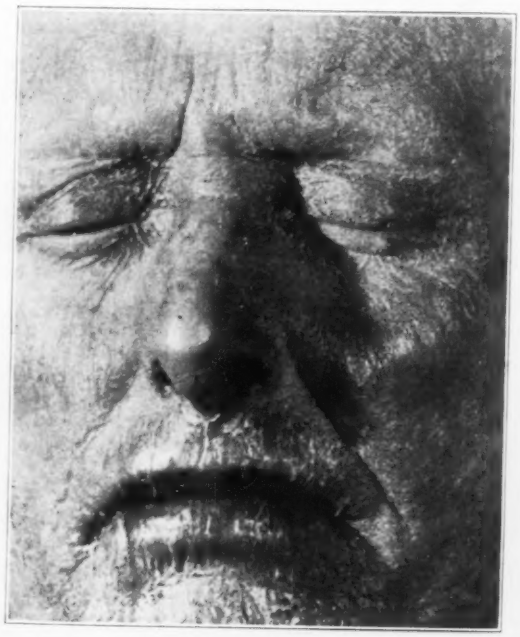

Fig. 1.—Absence of eyelashes and eyebrows.

Laboratory Investigations.—Biopsies: Biopsy of a lymph node showed a reticular endotheliosis of the Hodgkin type. A specimen of skin (fig. 5) showed the following changes: The epidermis was definitely atrophied and in places was reduced to a narrow strip consisting of only about a half-dozen rows of cells. It also showed a reduction in the amount of melanin in the basal layer in some regions. It was abnormally wrinkled and was covered by a moderate excess of keratin. A slight degree of perivascular cuffing with chronic inflammatory cells was evident in the superficial layers of the corium.

The picture was suggestive of vitamin deficiency.

Serologic Reactions: The Wassermann reaction was negative. A gonococcus flocculation test and a Paul-Bunnell test elicited negative reactions.

Blood Count: A blood count showed: hemoglobin content, 77 per cent; red cells, 3,650,000, and white cells, 7,400, of which 64 per cent were polymorphonuclear leukocytes, 20 per cent monocytes and 16 per cent lymphocytes.

Sternal Puncture: The picture is that of an active marrow, both red and white cells regenerating and the red cells following a normoblastic line of development. No signs of reticular infiltration were present.

Test of Hepatic Function.—After a test dose of 6 Gm. of sodium benzoate no hippuric acid was excreted in the urine during the succeeding four hours. A repetition of the test resulted in a total excretion of 1 Gm. in four hours. There was no evidence of renal failure; hence these results indicated a severe impairment of hepatic function.

Course.—The patient, apyretic on his admission to the hospital, improved rapidly, the skin softening, the icterus declining and bile disappearing from the urine.

Two eleven day pyrexial periods of a Pel-Ebstein type followed with an interval of a fortnight between. During these periods there was an exacerbation of all the signs, the jaundice recurring, the liver becoming tender and the patient appearing drowsy and semicomatose. Large areas of skin desquamated off in sheets, particularly from the face and chest, and generally the cutaneous surface became harder and more scaly. Urobilinuria preceded the jaundice, which was accompanied by bilirubinuria and light stools. The icteric index rose from 9 units during the apyrexial periods to 100 units during the Pel-Ebstein phases, and the monocyte count increased to 45 per cent, the total leukocyte count falling to 4,000.

Vitamin A Metabolism.—The cutaneous changes in this patient were almost identical with those described by Ronchese[6] in his case of Hodgkin's disease. While related in some way to the underlying disease process, they were obviously not a result of cutaneous lymph-

Fig. 2.—Striation of finger nails.

adenomatous infiltration. Many observers have noticed disturbances of vitamin A metabolism accompanying the dyskeratoses. Peck and co-workers[7] found low vitamin A levels in the blood of 2 patients with congenital ichthyosis, but substitution therapy did not cure the disease. In cases of keratosis follicularis Peck and

7. Peck, S. M.; Glick, A. W., and Chargin, L.: Vitamin A Studies in Cases of Ichthyosis, Arch. Dermat. & Syph. **48**:32 (July) 1943.

his colleagues[8] also found evidence of disturbed vitamin A metabolism. Large doses of vitamin A (200,000 U. S. P. units per day by mouth) effected an improvement in nearly all the cases. They concluded that the keratinization of the skin is related to disturbances of vitamin A metabolism.

Frazier and his co-workers,[9] discussing the cutaneous manifestations of vitamin A deficiency, pointed out that

Fig. 3.—Ichthyosiform appearance of knee

in adults xerosis of the skin frequently precedes the appearance of follicular hyperkeratosis.

Carleton and Steven[10] reviewed the whole question. They found that the following conditions have been associated by various investigators with vitamin A deficiency occurring either alone or together with deficiencies of other vitamins:

1. Follicular hyperkeratosis with local loss of hair.

2. Xeroderma, including some forms of ichthyosis, possibly due to keratinization affecting the sebaceous and sweat glands.

3. Pigmentation.

4. Dystrophy of the nails, with striation, stippling, white spots and fragility.

5. Alopecia.

They suggested the term "dysvitaminosis" rather than "avitaminosis" or "hypovitaminosis" because the fault is likely to be not so much a simple reduction or absence of the vitamin but some error in utilization.

The ichthyosis in our patient clinically resembled that encountered in severe grades of vitamin A deficiency, although no characteristic changes were observed in the eyes. The man gave a history of night blindness of some months' standing. No bias was given to the pathologist who examined the specimen of skin, which was labeled as being from a patient with Hodgkin's disease. Yet, in his opinion, a vitamin deficiency was the only diagnosis suggested by the histologic appearances.

Accordingly, determinations of vitamin A in both the blood and the urine were carried out by means of the Carr-Price reaction. The results are shown in the table.

The table shows two striking features, a diminished plasma content of vitamin A and carotene, together with a pathologic excretion of vitamin A in the urine.

Fig. 4.—Hyperkeratosis of soles.

The plasma vitamin A and carotene levels are well below the accepted normals of 100 international units of vitamin A and 50 to 240 micrograms of carotene per hundred cubic centimeters respectively. Administration of vitamin A restored the carotene level.

The urinary excretion of this fat-soluble vitamin is interesting, as such excretion never occurs in health, even after the ingestion of large doses. It is found, however, in various pathologic states such as high

8. Peck, S. M.; Glick, A. W.; Sobotka, H. H., and Chargin, L.: Vitamin A Studies in Cases of Keratosis Follicularis (Darier's Disease), Arch. Dermat. & Syph. **48**:17 (July) 1943.

9. Frazier, C. N.; Hu, C. K., and Chu, F. T.: Variations in the Cutaneous Manifestations of Vitamin A Deficiency from Infancy to Puberty, Arch. Dermat. & Syph. **48**:1 (July) 1943. Frazier, C. N., and Hu, C. K.: Nature and Distribution According to Age of Cutaneous Manifestations of Vitamin A Deficiency, ibid. **33**:825 (May) 1936.

10. Carleton, A., and Steven, D. M.: Keratosis Follicularis, Arch. Dermat. & Syph. **48**:143 (Aug.) 1943.

fever and renal and hepatic disease (Tomaszewski [11] and Lawrie, Moore and Rajagopal [12]).

It will be noted that in this case the urinary output of vitamin A increased considerably during a febrile phase and even more after vitamin A therapy. No

Determinations of Vitamin A and Carotene

Date	Plasma: Vitamin A, I. U./100 Cc.	Plasma: Carotene, Mcgm./100 Cc.	Urine, Daily Total of Vitamin A, I. U.	Comment
11/25/43	39	34	75	Patient apyretic
12/ 9/43	33	33	390	Temperature 102 F.; samples taken during a Pel-Ebstein phase
From December 22 until January 16 a total of 1,800,000 units of vitamin A was given parenterally				
1/18/44	*	161	600	Patient apyretic

* Owing to a technical error, the vitamin A in the plasma could not be determined on this date, and the patient's departure from the hospital prevented any further analysis.

The patient was removed from the hospital shortly afterward and died a little later at home. A postmortem examination was not carried out.

COMMENT

In case of severe disturbances of the liver vitamin A metabolism is also affected and symptoms such as night blindness and keratomalacia have been described. Moore [13] has done a good deal of work on this subject.

Patek and Haig [14] have suggested that the cause of vitamin A deficiency in patients with cirrhosis of the liver is an altered intermediate metabolism of vitamin A.

Popper and Steigmann,[15] in a recent extensive study based on 2,673 vitamin A determinations in health and in disease, found that the fall in the blood level of vitamin A approximately parallels the degree of hepatic damage and may be of diagnostic and prognostic value in cases of disease of the liver. They suggested that the causes of these low vitamin A levels may be as follows:

(*a*) Poor absorption.

(*b*) Impaired carotene–vitamin A transformation in the liver.

(*c*) Failure of liver storage.

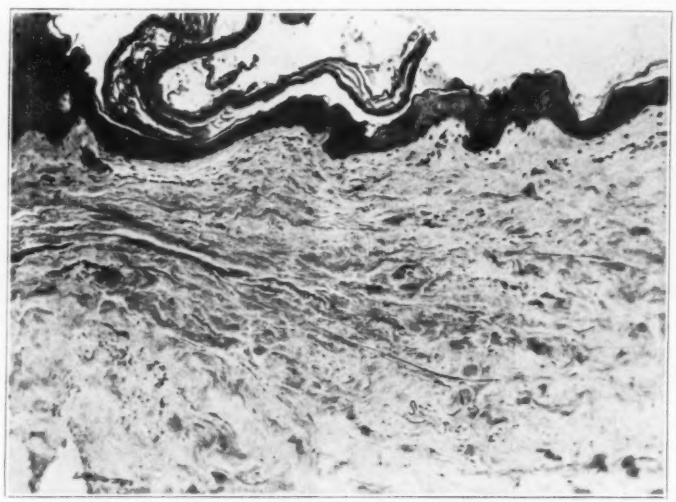

Fig. 5.—Photomicrograph showing ichthyosiform atrophy.

doubt the underlying disturbance of the liver, together with the fever, caused this excretion. Also it seems probable that the low plasma levels of vitamin A and carotene were partly dependent on the loss of vitamin A in the urine.

A total of 1,800,000 units of vitamin A was injected intramuscularly in daily doses of 100,000 units. The course was commenced between the two Pel-Ebstein phases, and at first any effect was masked by the natural clinical improvement which was occurring. Injections were continued throughout the second Pel-Ebstein phase, and, while the condition of the skin deteriorated again, it did not become so hard, scaly and desquamant as in the previous attack. On the whole, the skin seemed to derive benefit from the therapy.

11. Tomaszewski, W.: The Excretion of Vitamin A in Urine, Edinburgh M. J. **49**:375, 1942.

12. Lawrie, N. R.; Moore, T., and Rajagopal, K. R.: The Excretion of Vitamin A in Urine, Biochem. J. **35**:825, 1941.

13. Moore, T.: Vitamin-A Reserves of Human Liver in Health and Disease with Special Reference to Scope of Vitamin A as an Anti-Infective Agent, Lancet **2**: 669, 1932.

14. Patek, A. J., and Haig, C.: The Occurrence of Abnormal Dark Adaptation and Its Relation to Vitamin A Metabolism in Patients with Cirrhosis of the Liver, J. Clin. Investigation **18**:609, 1939.

15. Popper, H., and Steigmann, F.: The Clinical Significance of Plasma Vitamin A Level, J. A. M. A. **123**:1108 (Dec. 25) 1943.

(*d*) Disturbed release of vitamin A from the liver to the blood.

To these we would add:

(*e*) Pathologic excretion of vitamin A in the urine.

We were unable to examine the pathologic changes in the liver of our patient, but there was ample evidence of a severe hepatic derangement, no doubt due to lymphadenomatous infiltration.

The damaged state of the liver must have been the main factor disturbing the vitamin A metabolism of the patient, as his diet had been satisfactory.

SUMMARY

A man with Hodgkin's disease was found to have a severe degree of impairment of the liver together with a decided disturbance of vitamin A metabolism. He also showed a generalized ichthyosiform atrophy of the skin, and it is suggested that this atrophy may have been a secondary effect of the vitamin A upset.

Prof. Murray Lyon gave helpful advice and encouragement in the preparation of this paper.

RAT MITE DERMATITIS

ACARIASIS CAUSED BY THE TROPICAL RAT MITE, LIPONYSSUS BACOTI HIRST, 1914

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Rat mite dermatitis has been reported in the literature only five times, and its occurrence in the United States, but three times. Cases have been reported by Cleland [1] and by Hirst [2] in Australia, by Bishopp [3] and by Shelmire and Dove [4] in Texas and by Weber [5] in Chicago. These isolated reports indicate a rarity of the disease, but the fact of its occurrence in widely separated parts of the world should lead one to expect it wherever the brown rat is found. The disease should be ubiquitous, and I believe the general failure to recognize it is simply because of unfamiliarity with it. Therefore, I am reporting the following case and reviewing the literature.

REPORT OF A CASE

Miss L. G., a dietitian 42 years of age, first consulted me on April 24, 1942. About eight weeks previously she and her mother had noticed an itching eruption. A week after the onset she had consulted a physician, who had made a diagnosis of scabies and had prescribed a sulfur ointment. This was applied by the patient and her mother for the prescribed period of five days. Then, because of the persistence of the itching eruption, she had continued the use of the sulfur ointment for a total period of six weeks. At the end of this period a dermatitis appeared which she recognized as being due to sulfur. She discontinued the use of this medication and a week later consulted a second physician. She was told the eruption was due to nervousness and was given an intravenous injection of thiamine hydrochloride. A few days later she consulted me.

The patient was in a highly nervous state because of the persistence of the itching eruption, the "shame" of a scabies infestation and the work of repeated cleaning of personal and bed linen. To this trouble was added the itching eruption of her 70 year old mother, who was a semi-invalid with heart disease. In response to questioning, the patient stated that at no time had there been any involvement of the hands. She said that the eruption would appear on the trunk, extremities and neck as extremely pruritic hivelike lesions in groups of three, which she would excoriate. The sulfur ointment did not prevent the appearance of new lesions.

Examination showed a moderate dry red scaly dermatitis of the axillary and inframammary regions which resembled a subsiding sulfur dermatitis. There were groups of two to four spit pea–sized papules and wheals on the inner surfaces of the thighs, in both inguinal regions, on the lower part of the abdomen and over the left scapular region and the lateral surface of the right arm. Some of the lesions had been excoriated. Examination of others revealed a tiny central punctum. None of the lesions were hemorrhagic.

I informed the patient that she was suffering from insect bites, probably flea bites. She rejected this idea. She said that neither she nor her neighbors had either cats or dogs and that the only animals in her house were rats. Recalling the report of Weber,[5] I told the

1. Cleland, J. B.: Injuries and Diseases of Man in Australia Attributable to Animals (Except Insects), J. Trop. Med. **16**:43-47 (Feb. 1) 1913.

2. Hirst, S.: On the Parasitic Acari Found on the Species of Rodents Frequenting Human Habitations in Egypt, Bull. Entomol. Research **5**:215-229, 1914-1915.

3. Bishopp, F. C.: The Rat Mite Attacking Man, Circular 294, United States Department of Agriculture, Bureau of Entomology, 1923, pp. 1-4.

4. Shelmire, B., and Dove, W. E.: The Tropical Rat Mite, Liponyssus Bacoti Hirst, 1914, the Cause of a Skin Eruption of Man, and a Possible Vector of Endemic Typhus Fever, J. A. M. A. **96**:579-584 (Feb. 21) 1931.

5. Weber, L. F.: Rat Mite Dermatitis, J. A. M. A. **114**:1442 (April 13) 1940.

patient that there was a possibility that the insect bites might have been inflicted by either rat fleas or rat mites. She then stated that for about three years her house and a neighbor's house had been infested with rats and that from time to time she had set out rat poison. On Feb. 22, 1942 she had cleaned out a large storage cupboard above the kitchen sink and had found droppings from rats. The rats had gnawed a hole through the cupboard wall where the boards had separated. She covered this hole and thoroughly cleansed the cupboard. The pruritic rash had appeared on the patient and her mother two weeks later. I suggested that a professional vermin exterminator be called in and asked the patient to try to find some mites or fleas. A few days later she returned with a tiny gray mite which she had found crawling on her shoulder. This was identified as a female tropical rat mite, Liponyssus bacoti. The following day I visited the patient's home and with ease found several rapidly crawling mites on the kitchen wall above the sink. While I was observing their activities, two disappeared into a crevice between the cupboard and the kitchen wall. A few mites were removed from the wall with a camel's hair brush, as suggested by Shelmire and Dove,[4] and placed in a dry test tube with small bits of paper, and the tube was tightly corked. Later a female mite was photographed (fig. 1). The mites on the walls were demonstrated to the mother of the patient, who, previously opposed to fumigation with hydrocyanic acid gas, now agreed to this procedure. Apparently, the mites in the cupboard, deprived of their rat hosts, had sought and found human hosts. It is possible that some mites transferred themselves to the patient when she cleaned the cupboard.

LIPONYSSUS (LEIOGNATHUS) BACOTI HIRST, 1914

Description.—The gamasid tropical rat mite, species Liponyssus bacoti Hirst, 1914, is of the family Dermanyssidae, subfamily Liponyssinae, genus Liponyssus Kolenati, 1859.[6] The first description of the species was made by Hirst.[7] The first specimens studied were females found in Egypt on the brown rat, Mus norvegicus, on Mediterranean boats (feluccas). Hirst [2] completed the description of this species the following year after receiving specimens of males, females and nymphs from Egypt, Abyssinia, Australia and Argentina. As in all gamasid mites parasitic on vertebrates, the chelicerae (mandibles) are adapted for piercing. Characteristic of the tropical rat mite are the short, pointed and shearlike chelae (arms) of the chelicerae.[6] The female, male and protonymph are illustrated in figure 2. For details one may consult the descriptions by Ewing [6] and Hirst.[7]

Hosts.—Apparently the principal host of the tropical rat mite is the brown rat (Mus norvegicus), although Hirst [2] has reported its being found on the black rat (Mus rattus) and on the Egyptian mouse (Acomys cahirinus). Shelmire and Dove [4] also reported mice as hosts.

Life and Habits.—The habits and life cycles have been well described by Shelmire and Dove,[4] Dove and Shelmire,[8] and Bishopp.[3] After the mites have engorged themselves with blood, they leave their host and seek hiding places in cracks, crevices or other dark, protected places. They prefer warm places in the building. In these locations the immature mites molt and the gravid females deposit three to eight eggs. After molting or ovoposition has taken place, the mites seek rats for another meal, but if they find none they will look for other warm-blooded hosts, such as mice or human beings. The eggs hatch in four to eight days, and the larvae start their search for a suitable host, which they must find within twelve days or they will starve. According to Shelmire and Dove,[4] three or four moltings and four or five blood meals are necessary to complete the life cycle.

Identification.—These mites are minute, scarcely visible to the naked eye, and gray to pale yellowish gray. Unless engorged with blood they are very active. As

6. Ewing, E. H.: A Manual of External Parasites, ed. 1, Springfield, Ill., Charles C Thomas, Publisher, 1929, pp. 1-16.

7. Hirst, S.: (*a*) On Three New Species of Gamasid Mites Found on Rats, Bull. Entomol. Research **4**:119-124, 1913-1914; (*b*) footnote 2.

8. Dove, W. E., and Shelmire, B.: Some Observations on Tropical Rat Mites and Endemic Typhus, J. Parasitol. **18**:159-168 (March) 1932.

suggested by Shelmire and Dove,[4] they are easily picked up with a small camel's hair brush and transferred to a glass test tube. A smooth rubber cork should be used to stopper the test tube, for the mites will often disappear into the clefts of an ordinary cork. Before they are removed for identification, a few drops of ether on a cotton plug will quickly kill the mites.

They may be found in the walls and ceilings of an infested room. As they prefer warm places, they should be looked for near stoves and hot water pipes. Kitchens and bathrooms are rooms frequently infested. Cracks, crevices and drawers should be minutely examined. Of course, they will be found in large numbers in or near the nests of rats. Bishopp [3] stated that mites have been observed to drop from the ceiling of an infested room and to pass from one floor of a building to another along pipes extending through the floor. According to Dove and Shelmire, the tropical rat mites are not easy to find, even in localities where they are known to occur. However, in the home of my patient I found the mites crawling on the kitchen wall above the sink within thirty seconds after starting my search for them.

Distribution.—Apparently the tropical rat mite has a wide geographic distribution. It has been found in Egypt, Abyssinia, Argentina and Australia.[9] In the

Fig. 1.—Female tropical rat mite, dorsal aspect.

United States it has been found in large numbers in Texas.[10] Dove [8] reported that it had been found also in Maryland, Virginia, Georgia, Mississippi and Missouri. Weber [5] reported finding it in Chicago. Professional vermin exterminators tell me of their knowledge of the mite, which apparently is not shared by most physicians. While not all rats and mice are infested with tropical rat mites, one should be on the lookout for them wherever their natural hosts are present.

RAT MITE DERMATITIS

Probably the earliest account of the blood-sucking tropical rat mite attacking human beings was recorded from Australia by Cleland.[1] He wrote as follows: "Recently in Adelaide the employees of a manufacturing stationer were much bothered by small mites getting onto their persons and finding their way to hairy parts, especially the pudenda. There they produced intense irritation, necessitating immediate retirement to the lavatory where the small mites were detected." Rats

9. Cleland.[1] Hirst.[2]
10. Bishopp.[3] Shelmire and Dove.[4]

(Mus decumanus [Mus norvegicus]) were found in large numbers, even nesting among old papers. In such situations mites were in abundance and easily crawled onto those turning over the litter. From one such nest containing young rats, a large number of the mites were obtained. In character they resembled Laelaps agilis, though differing slightly in the shape of the body and in the character of the bristles. There is no record of these particular mites being studied further, but undoubtedly they were tropical rat mites, for specimens sent from other sources in Australia by Cleland were identified as Liponyssus bacoti by Hirst,[2] and he has stated that this species is of exceptional interest, owing to the fact that it readily attacks man.

Hirst [2] reported that tropical rat mites had bitten human beings in a boot factory and seed shop at Sydney, Australia, and on the wharves at night at Freemantle, Australia. Specimens were also found on human beings at Perth.

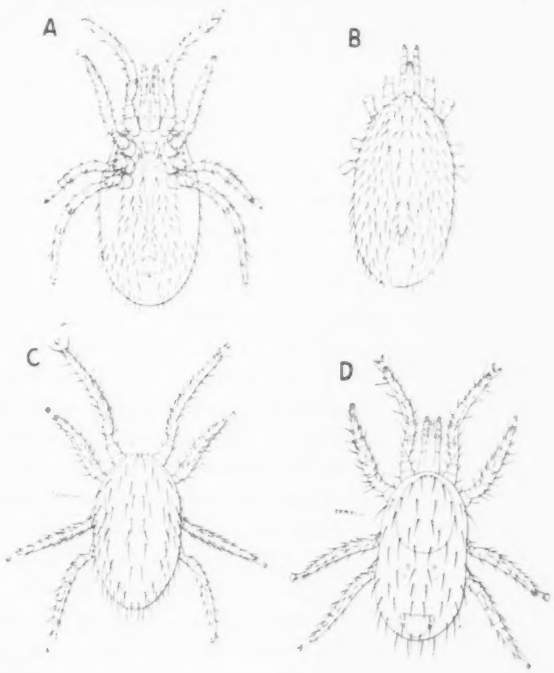

Fig. 2.—Liponyssus bacoti Hirst; *A*, ventral aspect of female; *B*, dorsal aspect of female; *C*, dorsal aspect of male; *D*, dorsal aspect of protonymph (from Hirst [7]).

The first published reference to the occurrence of rat mite dermatitis in the United States was made by Bishopp [3] from Dallas, Texas. The initial outbreak of this mite as a pest to man was coincident with a tremendous increase in the number of rats in 1920 and 1921. The rats and the mites were found in both modern steel and concrete and old frame and brick structures. The mite troubles were largely confined to buildings in the business sections of the city. The mites attacked persons in department stores, grocery stores, a railroad office building, a motion picture theater and federal buildings and in a music store adjacent to a restaurant. The mites were even found on the tenth floor of one building.

In 1931 Shelmire and Dove [4] made an extensive report on rat mite dermatitis occurring in Dallas and other parts of northern and eastern Texas. Three members of a family consulted Dr. B. D. Shelmire for an eruption which had been diagnosed

as scabies but which had been uninfluenced by sulfur medication. The dermatitis presented by the father and mother might easily have passed for a mild infestation of Sarcoptes scabiei. The girl, aged 18 months, presented a diffuse, extremely pruritic papular eruption on the body with secondary excoriations and pustules. On the face, neck and scalp a few scattered papules were present, which eliminated the possibility of scabies. On search of the patients' apartment, mites, many of which were engorged with blood, were found on the walls of the room, on the bed and on the body of the child. These were identified by Dr. W. E. Dove as Liponyssus bacoti. Five additional families in the apartment house were affected by bites of the parasites. Shelmire and Dove reported that about 200 additional cases had been brought to their attention. These patients had been bitten in theaters, a hospital clinic and laboratory, department stores, seed stores, hardware stores, a shoe shop, a restaurant, private homes and apartment buildings.

Weber [5] reported rat mite dermatitis in a group of department store employees, appearing after a campaign to eradicate rats from the store. He found the mites on the patients' skin, on dead rats and on boxes of merchandise. The mites were identified as Liponyssus bacoti. After the store had been fumigated with hydrocyanic gas, the trouble ceased.

Character of Attack and Types of Eruptions Produced.—The larvae, nymphs and adults attack man freely. According to Bishopp,[3] the pale, unfed nymphs usually appear in greatest numbers and are thought by some to bite more frequently than the adults. All crawl rather actively and frequently do much running about over the body, biting here and there. Some annoy by crawling about without biting. Bites may occur on any part of the body. Bishopp states that apparently the arms and legs suffer most, and that there is some tendency of the mites to bite where there is some constriction of the clothing, as around the belt line. Shelmire and Dove [4] stated that young children are also bitten on the face and hands. Young children usually present a more extensive involvement than adults in the same household. The bite of the mite produces a sharp, itching, painful sensation. At this time the mites may be found by the victim. Usually there is more or less irritation and itching at the site of attack for several hours. Both Bishopp [3] and Shelmire and Dove [4] stated that a mild fever may follow the bites.

The primary lesions are small urticarial papules and wheals, varying in size from a pinhead to a small pea or larger, depending on the reactivity of the skin of the host. In the center of each lesion is a small punctum, occasionally a minute vesicle. According to Shelmire and Dove,[4] frank vesicles are often present in children, and 1 of their patients with an extensive pruritic vesicular erupton had been quarantined because of a diagnosis of chickenpox. The wheals lack the hemorrhagic character usually typical of bedbug bites. Bishopp [3] stated that a small hemorrhagic area is present which seldom persists more than two days. Neither Shelmire and Dove [4] nor I observed this. There is a definite tendency to grouping of the lesions because of the piecemeal feeding of the mites. Because of the character of the lesions and their grouping, they are indistinguishable from flea bites.

Diagnosis.—Rat mite dermatitis must be differentiated from bites of fleas, bedbugs, chiggers, grain and harvest mites and bird mites, from scabies and pediculosis corporis and from all other forms of acariasis. In states such as California, where flea bites are common, the dermatitis may be ascribed to these and the possibility of the bites being due to rat mites entirely overlooked. In small children with large numbers of bites, the eruption must be differentiated from chickenpox and lichen urticatus as well as from scabies. It must be emphasized that when a para-

sitic infestation is suspected a definite diagnosis cannot be made until the parasite has been found and identified. A careful history is most important, as this will often indicate in what directions one should conduct the search. It must be remembered that rats and mice, while most often found in or near buildings in which food is stored or served, may be found in any new or old building of frame, brick, or steel and concrete construction. While all rats and mice are not infested with the tropical rat mites, nevertheless the inference is clear that rat mite dermatitis may occur almost anywhere.

RELATION TO ENDEMIC TYPHUS

During their studies on the tropical rat mite and on a dermatitis caused by bites of this mite, Dove and Shelmire [11] learned of the coincidental occurrence of this parasite with endemic typhus. It seemed likely to them that the parasites might be concerned in the transmission of the disease. With "clean," or noninfected, mites, they were able to transmit this disease experimentally from infected guinea pigs to noninfected guinea pigs and from infected guinea pigs to noninfected rats. They also were able to transmit this disease experimentally from infected guinea pigs to noninfected guinea pigs and from infected guinea pigs to noninfected rats. They also obtained evidence of the hereditary transmission of endemic typhus by mite larvae. Female mites fed on an infected guinea pig and became engorged with blood. Seven days later, when eggs of these females hatched, the young larvae fed on a "clean," or noninfected, guinea pig. This guinea pig, receiving bites of the larvae, contracted endemic typhus.

SUMMARY

An acariasis originally diagnosed as scabies was found to be due to the blood-sucking tropical rat mite, Liponyssus bocoti Hirst, 1914. A review of the literature reveals that since 1913 cases of a similar nature have been reported. It is suggested that a dermatitis from the bites of the tropical rat mite is common but often overlooked.

ADDENDUM.—Since this paper was written, I have found that another case of rat mite dermatitis has been reported by Dr. Hiram E. Newton (Newton, H. E.: Tropical Rat Mite Infestation, *California & West. Med.* **57:** 143 [Aug.] 1942). Additional cases have been observed by me.

1930 Wilshire Boulevard.

11. Dove, W. E., and Shelmire, B.: Tropical Rat Mites, Liponyssus Bacoti Hirst, Vectors of Endemic Typhus, J. A. M. A. **97:**1506-1511 (Nov. 21) 1931; footnote 8.

TUBEROUS SCLEROSIS

REPORT OF A CASE

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Tuberous sclerosis (epiloia), or Bourneville's disease, is a sufficiently uncommon clinical entity to justify the report of a case, particularly of an abortive case with variations from the classic symptom triad of idiocy, epilepsy and adenoma sebaceum as delineated by Vogt.[1]

In Europe the incidence in institutions for epileptic and feebleminded patients is about 0.6 per cent. In the United States it varies from 0.1 to 0.5 per cent in such institutions. Anderson [2] estimated the general incidence of tuberous sclerosis to be about 0.0002 per cent. Ross and Dickerson [3] expressed the opinion that the actual incidence is greater than this figure. However, many atypical cases undoubtedly go undiagnosed, particularly if the disease is not kept in mind. Consequently, it may be much more common than is suspected.

The disease generally manifests itself in infancy, though it may not be recognized until many years later. Usually the symptoms referable to the nervous system are most pronounced, though frequently the cutaneous manifestations or tumors of the viscera may predominate. Classically the features for the recognition of tuberous sclerosis are adenoma sebaceum of the face, mental deficiency and convulsions. The symptoms of involvement of the nervous system are manifested by local or generalized convulsive seizures and mental deficiency, the latter being present in the majority of cases. There are a few reported instances in which the patient's mentality was normal or slightly below normal.

Adenoma sebaceum is the most consistent of the cutaneous lesions and is of the greatest importance from a diagnostic standpoint. Other cutaneous lesions frequently associated with the adenoma sebaceum are pedunculated polyps, pigmented nevi, cutaneous fibromas and periungual fibromas. These manifestations have recently been reviewed by Butterworth and Wilson.[4]

Tumors of the various organs are not uncommon. These are retinal tumor (phacoma) of van der Hoeve [5] and tumors of the kidneys, heart, adrenal glands, thyroid gland, lungs and ovaries. The lesion of the eye may be single or multiple, flat or raised and is situated anywhere in the fundus but is not ordinarily connected with blood vessels. Hyman [6] stated that a renal tumor of the mixed embryonic type occurs in 80 per cent of the patients with tuberous sclerosis.

There may be multiple discrete areas of calcification scattered through the brain. These areas were stated by Yakovlev and Corwin [7] to be due to degenerative changes of tuberous nodules. An encephalogram may or may not show changes and not infrequently tumors of the lateral ventricle are demonstrated or a dilatation of the ventricular system is observed. The small bones of the hands and feet may show osteoporosis, fragmentation of the cortical layers or small areas of rarefaction that suggest cysts.

REPORT OF CASE

A white man 31 years of age was admitted to the hospital on Sept. 27, 1943 for treatment of growths of his finger nails and toe nails. Four years previous to his admission the first growth appeared on the lateral aspect of the nail of the index finger as a small painless lump underneath the eponychium at the base of the nail. About two months later it protruded from under the eponychium. At this time similar lesions appeared on various toes of both feet and on some of his fingers. During the progress of the disease two types of lesions occurred. If the finger nail or toe nail was grooved, the lesion was usually narrow and

1. Vogt, H.: Zur Pathologie und pathologischen Anatomie der verschiedenen Idiotieformen: II. Tuberose Sklerose, Monatschr. f. Psychiat. u. Neurol. **24**: 106, 1908.

2. Anderson, C. L.: Epilepsy in the State of Michigan, Ment. Hyg. **20**:441, 1936.

3. Ross, A. T., and Dickerson, W. W.: Tuberous Sclerosis, Arch. Neurol. & Psychiat. **50**:233 (Sept.) 1943.

4. Butterworth, T., and Wilson, M., Jr.: Dermatologic Aspects of Tuberous Sclerosis, Arch. Dermat. & Syph. **43**:1 (Jan.) 1941.

5. van der Hoeve, J.: Eye Symptoms in Phakomatosis: The Doyne Memorial Lecture, Tr. Ophth. Soc. U. Kingdom **52**:380, 1942.

6. Hyman, A.: The Association of Hypernephroma with Tuberose Brain Sclerosis and Adenoma Sebaceum, J. Urol. **8**:317, 1922.

7. Yakovlev, P. I., and Corwin, W.: A Roentgenographic Sign in Cases of Tuberous Sclerosis of Brain (Multiple "Brain Stones"), Arch. Neurol. & Psychiat. **42**:1030 (Dec.) 1939.

elongated. If the lesion was of a broad, flat type the nail would be thinner and flatter. In either case the nail would become brittle. There also appeared a small reddish growth on the skin of the septum of the nose which grew to the size of the head of a small match. One year later small warty growths began to develop on the medial aspect of each thigh.

The past history of the patient appears to be significant. In 1934 he had pneumonia. Later in the year he fractured his right leg. During this same year his left eye was removed, presumably because of infection. More important, on two occasions he had periods of unconsciousness. The first attack occurred when he was 19 years of age. He stated that he "passed out"

Fig. 1.—Flat, broad periungual fibroma with associated thinning, flattening and brittleness of the nail.

when on his way to the bathroom. He did not know how long he was unconscious or whether he had a convulsive seizure. However, he did not believe that he had bitten his tongue or had had any incontinence of urine or feces. He was weak after this attack and remained in bed for two days. The second episode occurred in 1942 while he was eating in a restaurant. He felt himself becoming dizzy, and again he "passed out." When he regained consciousness, he had abdominal pain and was apparently somewhat confused mentally. This lasted for about two hours. He did not bite his tongue at this time, and he was not told by any one whether or not he had had convulsions.

The family history was essentially noncontributory. His father died suddenly at the age of 57, presumably of a heart attack. His mother was living and well. One brother died in infancy from an accident and another from pneumonia. One brother was living and well. One sister died in infancy, but the cause of her death was unknown. Another sister died at the age of 24 of pneumonia. Two sisters were living and well, the older of whom had a child 9 years of age who had had epilepsy since the age of 3 years. This child had progressively deteriorated mentally and was removed from school at the age of 8. No other members of the immediate or past family had had epilepsy, nor was there a history of insanity in the family.

On physical examination the patient was found to be well nourished and well developed and of about average intelligence. On the left side of the forehead there was a lesion measuring 2½ by 3 inches (6.3 by 7.5 cm.) which presented a rather pale, elevated nodular appearance. This was stated to have been present for as long as the patient could remember, and a few years ago removal by electrocoagulation was attempted. On the tip of the nose there was a pedunculated vascular growth measuring 5 mm. in diameter. The left eye had been removed, and the patient wore a prosthesis. The vision of the right eye was 20/20, and the fundus was normal. The results of the neurologic examination were essentially normal. The patient's intelligence quotient was 91, and his mental age was 12 years.

On the upper medial part of each thigh there were sixty-five small pedunculated warty appearing polyps, the largest of which was about ½ inch (1 cm.) in length. There were mild varicosities in the left leg. Some of the toe nails were deformed. Some were grooved, and others were flattened; but all were dry and brittle. The groove began under the eponychium and extended to the distal end of the nail. Lying in each groove and occupying a portion of it was a pinkish nontender elongated growth that arose from under the eponychium. From the great toe nail this growth was centrally located. The growth on the middle toe was flat, almost covered the entire nail and arose from under the eponychium. This nail was flattened, thin, dry and brittle. There was a small growth on the fourth toe which lay in a groove, and a well developed, elongated lesion on the fifth toe nail was present. On the right foot the third toe nail was flattened, and a fibrous growth partially overlay the central portion of the nail. Similar lesions were found on the fourth and fifth toe nails.

There were similar growths involving the finger nails of both hands. Those involved on the right hand were the index and middle finger nails. On the left hand there were lesions of the nails of the index and little fingers.

The results of laboratory examinations were essentially normal. The Kahn reaction was negative, and the urine was normal. Determinations of blood chemistry showed: nonprotein nitrogen, 20.7 mg.; cholesterol, 238 mg.: phosphorus, 3.9 mg., and calcium, 10 mg. per hundred cubic centimeters. A roentgenogram of the skull revealed a discrete dense calcified mass 3 mm. in diameter apparent in the brain in the region of the knee of the left lateral ventricle. The pineal gland was partially calcified and bore a normal relationship to the calvarium. Otherwise no changes were found. Roentgenograms of both hands and feet showed nothing significant. The chest was normal. The gastrointestinal series was entirely normal.

Fig. 2.—Periungual fibroma associated with grooving of the nail.

Biopsies were made of the lesions on the forehead, nose, groins and toes. The specimen from the growths surrounding the toe nail was firm and covered with epidermis which rested on a core of dense fibrous connective tissue. Microscopically, it was composed prin-

cipally of a pedunculated growth of connective tissue covered by epidermis. The surface keratin was thick. The layers of the epidermis were normal. The connective tissue was composed of thick bands of collagen with scattered spindle-shaped fibrocytes. The blood vessels were numerous but normal in appearance. The section of the growth from the forehead showed a normal epidermis with layers of normal thickness. In the dermis were many degenerated or imperfectly formed hair follicles and numerous sebaceous glands, some of which lay free in the connective tissues and others adjacent to follicles. There was a tendency to grouping of the sebaceous glands. The sweat glands were dilated but were otherwise not unusual.

The polypoid lesion from the nose showed numerous small blood channels embedded in a loosely arranged connective tissue. Many of these were filled with red blood cells. The endothelium of the vessels was hyperplastic, and cells similar to endothelial cells were found between the capillaries. Scattered lymphocytes and plasma cells were seen. The epidermis was thin.

The tumors from the groin showed a papillary appearance of the epidermis with some of the rete pegs extending fairly deep into the dermis. The dermis was composed of dense strands of hyaline connective tissue in which there were numerous dilated and hyperemic capillaries. There was only a slight amount of inflammatory reaction.

During hospitalization the patient did not have a period of unconsciousness.

COMMENT

It is felt that the diagnosis of tuberous sclerosis is clinically established in this case by the presence of adenoma sebaceum, periungual fibroma, pedunculated polyps and a calcified area in the brain with a history of unconsciousness without definite convulsions, which might have been an epileptic equivalent, and the history of epilepsy in the immediate family which appeared early in life and is associated with progressive mental deterioration.

Ross and Dickerson [3] in their study of 17 cases with reference to the time of appearance of convulsions and adenoma sebaceum found that in only 1 of the 17 cases did the appearance of the sebaceum antedate the onset of convulsions. In our case the adenoma sebaceum on the forehead was present long before the appearance of the spells of unconsciousness. The order of appearance of the cutaneous manifestations in this case was adenoma sebaceum, periungual fibroma, vascular nevus and, finally, fibrous pedunculated polyps. The last three appeared within a relatively short period of each other. So far as can be determined, there has been no mental deterioration. We have been unable to determine the reason for the removal of the left eye, but from the description given by the patient the disease was probably ophthalmitis, though a retinal tumor could have been present.

CONCLUSION

In a patient with tuberous sclerosis with predominance of cutaneous manifestations, there was early development of adenoma sebaceum and absence of mental deterioration.

KAPOSI'S VARICELLIFORM ERUPTION

REVIEW OF THE LITERATURE AND REPORT OF TWO CASES OF ITS OCCURRENCE IN ADULTS *

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AND
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ROCHESTER, MINN.

In his textbook published toward the close of the nineteenth century Kaposi [1] described a complication of infantile eczema, not previously recorded, based on his observation of 10 patients with a "varicelliform eruption." His description has scarcely been improved on in the subsequent half century. Inasmuch as the disease is rare, even in childhood, we should like to report 2 cases in which the patients were adults. Both had chronic atopic dermatitis.

REPORT OF CASES

CASE 1.—A white physician aged 30 years had been seen repeatedly by members of the dermatologic staff since June 1939, because of atopic dermatitis (disseminated neurodermatitis) from which he had been suffering since infancy. Off and on there had been characteristic remissions and relapses. There was no history of hay fever, asthma, migraine or urticaria. He had been vaccinated against smallpox at the ages of 5, 9, 14 and 22 years. On the last occasion there was a reaction designating an "accelerated take." At this time, too, in spite of the fact that eczema was present, there was no untoward influence of the vaccination on the condition of the skin.

Early in April 1942, the condition of the skin about the face, neck, wrists and groins was worse than usual. On April 26 he noted enlargement of the submental lymph nodes, with tenderness. The following morning there were vesicles on the central portion of the chin, and by afternoon of the same day these had extended over the chin to the submental area. Under the impression that impetigo contagiosa was present, the patient applied 5 per cent ammoniated mercury ointment to the affected site.

The next morning, on April 28, two new lesions appeared on the right side of the cheek. Soon the entire right side of the face was involved, and at all sites there were appreciable redness and swelling and malaise and fever were present. By the evening of April 29, lesions had appeared over the entire neck and the upper part of the thorax. The submaxillary nodes were swollen and tender. In this condition the patient was admitted to the hospital.

Examination at the time of admission revealed pronounced edema and erythema of the skin of the face, neck and upper part of the thorax. On this bright red, swollen base oozing and crusting were taking place. The submaxillary and submental lymph nodes were large and tender. Within a few hours after his admission there was a sharp chill followed by a rise in temperature to 103 F.

The nature of the patient's illness was obscure at this time; the possibility of impetigo plus an added reaction of irritation from mercury seemed likely. Within a day or two there was a succession of chills and fever, with profound systemic reaction.

A troublesome cough developed, and there was a sensation of "tightness" in the thorax. Diarrhea was noted, the liquid stools numbering as many as eight in one day, and for two days there was incontinence of feces and urine. In spite of treatment, the symptoms persisted, and the temperature rose gradually to a crest of 105 F. on the sixth day. At this time, too, there were severe headache and stiffness of the neck which could not be relieved by analgesics. On May 3, the eighth day of the disease, when the fever and systemic reaction seemed to be receding, there was a change in the nature of the eruption. Discrete lentil-sized umbilicated vesicular pustules were noted at the periphery of the involved sites. The lesions demonstrated a tendency toward grouping (fig. 1). On May 5 for the first time lesions appeared at more remote locations, involving the wrists and groin. Herpes zoster generalisatus was then considered a likely diagnosis. Sulfathiazole in sizable doses was administered by mouth, but it had no influence on the course of the disease (fig. 2).

During the next few days new crops of umbilicated vesiculopustular lesions appeared, and it now became apparent that the eruption bore a close resemblance to vaccinia.

On May 11 there appeared a small vesicular lesion on the cornea of the eye. A superficial ulcer developed, which subsequently healed and left a faint scar. The mucous membranes of the mouth presented no lesions. Burning epigastric distress was severe. After reaching its peak, the fever terminated by lysis. On May 18 the patient was dismissed from the hospital, having lost 15 pounds (about 7 Kg.) during his stay; subsequently, he lost most of the hair of his scalp, but there was complete regrowth during the ensuing six months. At the time of dismissal there were small pitted pigmented scars on the face, neck and thorax, which were barely

From the Section on Dermatology and Syphilology, Mayo Clinic.

* See preliminary report, Proc. Staff Meet., Mayo Clin. **18**:199 (June 30) 1943.

1. Kaposi, M.: Pathology and Treatment of Diseases of the Skin for Practitioners and Students, translated by J. C. Johnston, New York, William Wood & Company, 1895.

discernible at a short distance. The original atopic dermatitis seemed to be unaffected by the acute intercurrent process.

Laboratory Studies.—Results of blood cultures taken on May 1, 4, 5 and 6 were reported as negative. Agglutination tests for Eberthella typhi, carried out with the patient's serum, likewise gave negative results.

Aside from a moderate degree of albuminuria on May 2, the urine remained normal on examination. Hematocytologic studies were made at frequent intervals. The leukocytes never exceeded 12,500 cells per cubic millimeter, and the differential count revealed 80 per cent polymorphonuclear neutrophils, 13 per cent lymphocytes and 7 per cent monocytes. The erythrocytes numbered 4,520,000 per cubic millimeter, and the

Fig. 1 (case 1).—Appearance of the patient at the crest of the systemic reaction. Note the degree of edema of the neck and the confluence of the vesicopustular lesions.

hemoglobin content of the blood was estimated at 14 Gm. per hundred cubic centimeters. The urea content of the blood was reported as 16 mg. per hundred cubic centimeters. The carbon dioxide–combining power of the blood ranged between 46.6 and 54.1 volumes per cent. Roentgenograms of the thorax were taken repeatedly and were reported as showing nothing abnormal. Cultures from several vesicopustules of the face yielded pure growth of Staphylococcus aureus. The result of the Paul test was negative.

CASE 2.—A white woman aged 21 years had been seen repeatedly since 1934 because of atopic dermatitis and diabetes mellitus. Eczema had been present since infancy. She had been vaccinated successfully as a child. On Dec. 22, 1942, a "cold sore" was noted at the left angle of the mouth. Three days later a vesiculopustular eruption appeared on the face, neck and upper part of the thorax, associated with swelling of the skin in these sites and enlargement of the cervical lymph nodes. The patient did not feel ill, and her temperature at the time did not exceed 100 F. (fig. 3 *a* and *b*).

One week after the onset of the new eruption, the patient reported to the clinic and was admitted to the hospital, not only because of the eruption but because she had recognized a return of severe glycosuria. In the hospital the course of her disease was uneventful. Her temperature never exceeded 100 F., and at no time was malaise prominent. On January 5, when she was dismissed from the hospital, the skin presented only areas of residual erythema and pigmentation and the diabetic complication was under control. The eczematous lesions remained unaffected by the intercurrent eruption.

Laboratory Studies.—The leukocyte count was 4,300 per cubic millimeter. The differential count disclosed 77 per cent polymorphonuclear neutrophils, 15 per cent lymphocytes and 8 per cent monocytes. Sugar was present in large quantities in the urine.

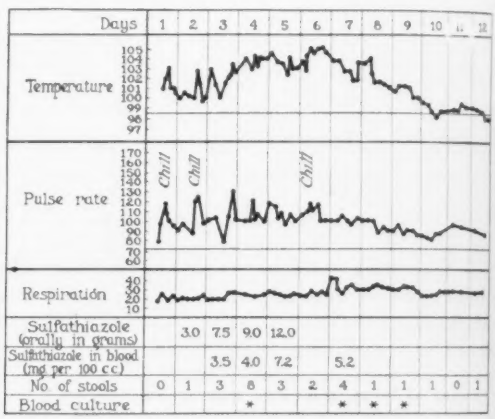
Days
1 2 3 4 5 6 7 8 9 10 11 12
Temperature
105 104 103 102 101 100 99 98 97
Pulse rate
170 160 150 140 130 120 110 100 90 80 70 60
Chill
Chill
Chill
Respiration
40 30 20 10
Sulfathiazole (orally, in grams)
3.0 7.5 9.0 12.0
Sulfathiazole in blood (mg. per 100 cc.)
3.5 4.0 7.2 5.2
No. of stools
0 1 3 6 3 2 4 1 1 1 0 1
Blood culture
* * * *

Fig. 2 (case 1).—Reproduction of the hospital chart of the patient, illustrating the severe systemic reaction.

BACTERIOLOGIC INVESTIGATION

The following studies were made by Dr. F. R. Heilman, of the Section on Bacteriology and Parasitology:

In case 1, cultures from lesions on the face revealed a pure growth of Staphylococcus aureus. The result of the Paul test was negative.

In case 2, material from the pustules cultured on blood agar produced many colonies of Staphylococcus aureus. The Paul test gave a negative result. In histologic sections of the cornea of the rabbit used for the Paul test Guarnieri bodies were not found. Scrapings from a portion of the washed cornea of the rabbit used for the test were passed by corneal scarification through several more rabbits with the consistent production of typical herpetic keratitis, indicating the presence of the virus of herpes simplex. One ear of a rabbit was scratched to allow inoculation with this virus but lesions did not result, while on the other ear

which was scratched to allow inoculation with known vaccinia virus, typical vaccinia pustules developed; thus, in a rabbit shown to be susceptible to vaccinia, the virus isolated from the patient did not produce lesions on the skin.

Furthermore, the bacteria-free virus isolated from the patient by passage through a rabbit produced typical encephalitis of herpes on intracranial injection into mice. In addition, immune properties against the virus of herpes simplex were demonstrated in the serum of a rabbit which had recovered from keratitis produced by corneal inoculation with the virus isolated from the patient. By means of the conventional neutralization test, it was found that this serum, in contrast to normal rabbit serum, protected mice against the equivalent of 80 minimal lethal intracranial doses of a known herpes virus.

Thus, the virus isolated from the patient was shown to be that of herpes simplex; no evidence of the presence of vaccinia virus was obtained. No known herpes virus had been in the laboratory where the work was done for several years previous to the present experiments.

TREATMENT

Both patients were treated with wet compresses applied to the skin. The most satisfactory preparation was 0.05 per cent aqueous solution of potassium permanganate. Sulfathiazole was administered internally. In case 1, sufficiently large quantities were given to produce a concentration in the blood of 7.2 mg. per hundred cubic centimeters. Beneficial effect from this drug was not observed.

Fig. 3 (case 2).—Typical discrete vesicopustules are present on the face and neck.

NOMENCLATURE

In the literature, Kaposi's varicelliform eruption is to be found described under a variety of names. Kaposi applied the term "eczema herpetiforme" to the disease. A few years later Juliusberg[2] described the disease under the title "pustulosis acute varioliformis." Since that time the disease has been discussed under the following titles: "acute vacciniform pustulosis," "pustulosis varioliformis seu vacciniformis acuta," "vacciniform pyoderma," "varioli-

2. Juliusberg, F.: Ueber Pustulosis acuta varioliformis, Arch. f. Dermat. u. Syph. **46**:21-28, 1898.

form pyoderma,"[3] "pustulosis vacciniformis Kaposi," "pyodermite postpuerpérale varioliforme"[4] and, most recently, "dermatitis vaccinica."

ETIOLOGY

Although the disease has been recognized for almost fifty years, there is no agreement among investigators regarding its cause. Kaposi suggested that a fungus might be the etiologic agent. Staphylococci have been found in the lesions by Juliusberg,[2] Brown,[5] Freud,[6] Goyert,[7] King,[8] Bendre,[9] Streitmann[10] and Kooij.[11]

Streptococci, in both long and short chain forms, have been found by Rasch,[12] McLachlan and Gillespie,[13] King,[8] Hoffken[14] and Brain and Lewis.[15]

Notwithstanding these findings, many observers have been impressed by the striking clinical resemblance of this disease to the virus exanthems and have postulated a viral causation for the disease; in fact, some investigators[16] have held that Kaposi's varicelliform eruption is identical with eczema vaccinatum, an eruption which results sometimes when an eczematous person is exposed to vaccine virus.

While most recent investigators regard the disease as a viral infection, opinion is sharply divided on the identity or independence of Kaposi's varicelliform eruption and eczema vaccinatum. That the two diseases cannot be distinguished clinically is granted by all who have studied them. In a case of eczema vaccinatum, a definite history of exposure of an eczematous child to vaccine virus can usually be obtained. That the failure to secure a history of exposure to vaccinia is not a measure of neglect on the part of the physician taking the history is borne out by the fact that determined efforts were made in most of the cases, including ours, to secure any possible clue suggesting contact with recently vaccinated persons.

The cornea of the rabbit is especially susceptible to the virus of vaccinia or variola, and usually keratitis develops within a few days after inoculation.[17] Microscopic examination of prepared slides of such a rabbit's cornea will reveal typical Guarnieri bodies.

Freund[18] alone was able to demonstrate typical Guarnieri bodies in the rabbit's cornea following inoculation with the contents of a pustule from a patient with Kaposi's varicelliform eruption. Since then, a number of investigators[19] have attempted to confirm this observation, without success. In some cases serial sections of the cornea were included in the studies. In patients suffering from vaccinia, inclusion bodies may be demonstrated in specimens of skin obtained for biopsy. Such bodies were sought for in patients suffering from Kaposi's varicelliform eruption but could not be found by Frühwald,[17] Goyert,[7] Bendre[9] and Freund.[18] Material taken from patients with Kaposi's varicelliform eruption and injected intracutaneously and intratesticularly into guinea pigs and rabbits failed to give any evidence of vaccinia virus, according to Brain and Lewis[15] as well as Bettley.[20]

Seidenberg[21] has offered a valuable contribution to the understanding of the nature of this

3. Kissmeyer, A., and Buhl, J.: Pustulosis vacciniformis Kaposi, Rev. franç. de dermat. et de vénéréol. **11**:133-137 (March) 1935.

4. Milian, G., and Fernet, P.: Pyodermite postpuerpérale varioliforme, Rev. franç. de dermat. et de vénéréol. **9**:613-616 (Dec.) 1933.

5. Brown, W. H.: Kaposi's Varicelliform Eruption, Brit. J. Dermat. **46**:1-7 (Jan.) 1934.

6. Freud, P.: Ueber Pustulosis vacciniformis acuta, Monatschr. f. Kinderh. **51**:28-31, 1931.

7. Goyert, K.: Ein Beitrag zur Pustulosis vacciniformis acuta, Dermat. Wchnschr. **108**:478-482 (April) 1939.

8. King, A. D.: Kaposi's Varicelliform Eruption: Report of Five Cases, in One of Which the Condition Began as Herpes Zoster, Arch. Dermat. & Syph. **39**: 1035-1039 (June) 1939.

9. Bendre, V.: Ueber das Krankheitsbild der varioliformen Pyodermie (Pustulosis varioliformis acuta), Dermat. Wchnschr. **100**:305-312 (March) 1935.

10. Streitmann, B.: Ueber verioliforme Pyodermien, Arch. f. Dermat. u. Syph. **178**:99-105, 1938.

11. Kooij, R.: Acute Varioliform pustulosis, Nederl. tijdschr. v. geneesk. **81**:571-575 (Feb. 6) 1937.

12. Rasch, cited by Brown.[5]

13. McLachlan, A. D., and Gillespie, M.: Kaposi's Varicelliform Eruption: An "Epidemic" of Sixteen Cases, Brit. J. Dermat. **48**:337-356 (July) 1936.

14. Hoffken, K. H., cited by Goyert.[7]

15. Brain, R. T., and Lewis, B.: Investigation of Virus Diseases of the Skin, with Report of a Case of Kaposi's Varicelliform Eruption, Brit. J. Dermat. **49**: 551-560 (Dec.) 1937.

16. Platou, E. S.: Eczema Vaccinatum, Am. J. Dis. Child. **48**:333-334 (Aug.) 1934. Tedder, J. W.: Eczema Vaccinatum, Arch. Dermat. & Syph. **34**:1008-1023 (Dec.) 1936. Ellis, F. A.: Eczema Vaccinatum: Its Relation to Generalized Vaccinia; Report of Two Cases, J. A. M. A. **104**:1891-1894 (May 25) 1935. Peppel, A. W.; Murrell, T. W., and Fowlkes, R. W.: The Varicelliform Eruption of Kaposi, South. M. J. **35**:667-671 (July) 1942.

17. Frühwald, R.: Pustulosis vacciniformis acuta beim Erwachsenen, Dermat. Wchnschr. **99**:922-927 (July) 1934.

18. Freund, H.: Zur Ätiologie der Pustulosis vacciniformis acuta (Kaposi-Juliusberg), Dermat. Wchnschr. **98**:52-58 (Jan.) 1934.

19. Kooij.[11] McLachlan and Gillespie.[13]

20. Bettley, F. R.: Kaposi's Varicelliform Eruption: Some Experimental Findings, Brit. J. Dermat. **52**:222-225 (July) 1940.

21. Seidenberg, S.: Zur Aetiologie der Pustulosis vacciniformis acuta, Schweiz. Ztschr. f. Path. u. Bakt. **4**:398-401, 1941.

disease. He demonstrated that rabbits inoculated with material from a pustule of Kaposi's varicelliform eruption were easily susceptible subsequently to the vaccine virus, whereas rabbits exposed to Kaposi's varicelliform eruption presented definite immunity to herpes virus, which indicates that there was no cross immunity between Kaposi's varicelliform eruption and the vaccine virus and that there was definite cross immunity between the virus of Kaposi's varicelliform eruption and that of herpes virus. He concluded that Kaposi's varicelliform eruption bore no etiologic relation to vaccinia and ventured the opinion that the disease is a manifestation of herpes infection in a person with an exudative diathesis.

PREDISPOSING CAUSES

In practically every case, patients with Kaposi's varicelliform eruption have had some preceding disease of the skin. The majority have suffered from atopic dermatitis. Of 67 cases reported, 53 fell in this group (79 per cent). Other diseases which have predisposed to Kaposi's varicelliform eruption are seborrheic dermatitis,[14] impetigo,[13] scabies[13] and sycosis vulgaris.[10] Simple trauma,[9] as well as the puerperium,[22] also have been followed by the eruption.

Of the 50 patients for whom the sex was listed, 30 were males and 20 were females. In 51 of the 67 cases (76 per cent) the patients were children 3 years of age or younger. Only 13 cases have been reported in which the patients were more than 14 years of age.

RELATION TO VACCINIA

At least 7 of the persons whose cases have been reported in the literature had been successfully vaccinated prior to the onset of Kaposi's varicelliform eruption. In these, the vaccination had been done months or years previously. Bendre's[9] patient had been successfully vaccinated three times, and the patient represented in our case 1 had been vaccinated four times.

Particularly interesting are those cases in which vaccination has been attempted after recovery from Kaposi's varicelliform eruption. In all cases the vaccination was successful. In none of these did the patient exhibit the immune or accelerated reaction but went on to development of the nonimmune reaction in the span of ten days.[23] Benedict and Wiedmann[24] vaccinated their patient after his recovery from Kaposi's varicelliform eruption with 0.1 cc. of a 1 to 200 solution of vaccine virus. They obtained a characteristic positive reaction at the site of inoculation in ten days. In Ronchese's[25] case a positive "take" failed to develop, but the child clearly was suffering from eczema vaccinatum and had been exposed to vaccine virus.

The course of Kaposi's varicelliform eruption in patients previously vaccinated did not seem to differ materially from that in patients who had not been so vaccinated.

DIAGNOSIS

Although the eruption, fever and adenopathy present an impressively characteristic syndrome when fully developed, in its early stages Kaposi's varicelliform eruption may be confused with other disorders. The difficulties in our cases already have been stated. At different times we considered as likely possibilities dermatitis venenata, impetigo contagiosa and herpes zoster generalisatus. Goeckerman and Wilhelm[26] expressed the belief that their patient was suffering from rhus dermatitis early in the course of his illness. Brown considered the possibility of an unusual iodide eruption or smallpox before making the diagnosis of Kaposi's varicelliform eruption in his case. McLachlan's patient was kept in isolation for several days because she was thought to have smallpox. King's 72 year old patient suffered from an eruption which, after careful scrutiny, appears to us to have been herpes zoster generalisatus rather than Kaposi's varicelliform eruption, under which title the case was reported.

Kaposi's varicelliform eruption can usually be distinguished from varicella by the severity of the symptoms of the former, particularly the febrile reaction. Variola is characterized as a unimorphous eruption whereas Kaposi's varicelliform eruption appears in recurrent crops. The delled vesicopustule serves to distinguish Kaposi's varicelliform eruption from an iodide eruption as well as from dermatitis venenata. Herpes zoster generalisatus is many times preceded by the zonal type of herpes zoster; occasionally it is associated with the lymphoblastomas.

The disease runs a fairly characteristic course. In almost every case there is some antecedent disease of the skin, usually atopic dermatitis.

22. McLachlan, A. D.: Kaposi's Varicelliform Eruption, Brit. J. Dermat. **46**:8-11 (Jan.) 1934.

23. Hoffken,[14] Freund.[18]

24. Benedict and Wiedmann: Pustulosis Varicelliformis, abstracted, Dermat. Wchnschr. **101**:1248 (Oct. 5) 1935.

25. Ronchese, F.: Dermatitis Vaccinia (Kaposi's Varicelliform Eruption), Arch. Dermat. & Syph. **47**: 613-619 (May) 1943.

26. Goeckerman, W. H., and Wilhelm, L. F.: Kaposi's Varicelliform Eruption: Report of a Case, Arch. Dermat. & Syph. **32**:59-61 (July) 1935.

The disease is usually ushered in with high fever, malaise, regional lymphadenitis and intense edema of the affected skin, on which, sooner or later, appear lentil-sized umbilicated vesicopustules arranged discretely or in groups and limited almost exclusively to the portions of the skin previously involved by the preceding cutaneous disease. The characteristic lesions are situated on a brightly erythematous base. In a few days they crust over or break open, exposing the corium. New lesions continue to appear during the first seven to ten days of the illness. They heal with little scarring.

Stiff neck, severe headache, burning pain in the epigastrium and incontinence of urine and feces were noted in our cases. Brain and Lewis [15] reported that their patient had hemorrhagic diarrhea.

Other complications which have appeared in connection with Kaposi's varicelliform eruption are anuria,[20] otitis media,[8] purulent rhinitis,[27] conjunctivitis,[28] tetanic spasticity and shallow corneal ulcers; in addition, gangrenous slough, abscesses and suppuration of the regional lymph nodes [13] have been described.

That the eruption is not limited to the skin alone but may involve the mucous membranes of the mouth is attested by the reports of Brain and Lewis, Feit [28a] and McLachlan and Gillespie.

PROGNOSIS

Sutton and Sutton [29] have asserted that fatalities are rare. The gravity of the prognosis may be estimated by the fact that 17 of the 67 patients who have been the subjects of reports in the literature died (25 per cent). The mortality was lower among adults than among children. Among 13 cases in which the patients were adults and the diagnosis could be accepted without reservation, there were 2 deaths. Among 51 cases in which the patients were children 3 years old or younger, there were 14 deaths (27 per cent).

COMMUNICABILITY

The disease can assume epidemic proportions in a dermatologic ward. McLachlan and Gillespie reported 16 cases in a single epidemic. It is interesting to note that eight days after the first patient was admitted to the ward, 4 new cases of the disease appeared, which suggests that this length of time is the incubation period.

In this connection it is of interest also to note that several instances have been reported in which the disease has been transmitted to persons engaged in the care of patients suffering from Kaposi's varicelliform eruption. Thus, Juliusberg [2] reported the appearance of characteristic lesions on the eyelids of the mother of the child affected with the disease; it was later discovered that the mother frequently had held the child close to her face during his illness. McLachlan and Gillespie cited the development of unusual bullous lesions of the hands and arms of several nurses exposed to affected children during the epidemic. Vesiculopustular lesions developed on the hands of 3 nurses while caring for the patient represented in our case 1; Staphylococcus aureus was obtained by culture in each instance. None of the nurses had disseminated lesions, nor was malaise or fever noted.

SUMMARY

After a review of the literature on Kaposi's varicelliform eruption, it seemed incumbent on us to report 2 cases in which the patients were adults. Both had atopic dermatitis. No evidence of vaccinia virus was obtained in either case. In case 2, the virus of herpes simplex was isolated. The theory that Kaposi's varicelliform eruption is caused by the virus of vaccinia was not supported by the findings in these 2 cases. The evidence tends to support the opinion that this disease is a manifestation of the exaggerated reactions of persons with exudative diathesis, such as atopic dermatitis, to the virus of herpes simplex. Neither of our 2 patients responded to treatment with sulfathiazole.

27. Corson, E. F., and Ludy, J. B.: Kaposi's Varicelliform Eruption: Report of Three Cases, Am. J. Dis. Child. **50**:1476-1481 (Dec.) 1935.

28. (*a*) Feit, H.: Pustulosis Vacciniformis Acuta (Juliusberg) Followed by Anuria and Tetanic Spasticity: A Complicating Disease of Infantile Eczema, New York State J. Med. **33**:645-647 (May 15) 1933. (*b*) McLachlan and Gillespie.[13]

29. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939.

JUXTA-ARTICULAR NODULES

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The interest shown recently in the subject of juxta-articular nodules is certain to be further stimulated by the brief but excellent historical review of the literature by Drs. Kalz and Newton in the issue of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY for December 1943.

The statement that small though palpable nodules may occur frequently and most likely escape the attention of the examiner in a routine case of syphilis has left me wondering how many such cases I may have passed over. It is, however, for the small lesions that differential diagnosis becomes most difficult. The number of cases of syphilitic juxta-articular nodules seen was small, no doubt because of the short interval between onset of infection and the clinical examination, as these lesions always begin as tiny nodules and progress slowly over a period of years. From a diameter of a few millimeters they may attain to the size of a tennis ball—one has been seen which was actually the size of a cricket ball.

The following report on 128 patients with juxta-articular nodules is submitted to confirm the opinion that infection with yaws is one of the causes in the production of these lesions. These patients were seen in yaws-endemic areas in rural parts of Jamaica in persons with neither history nor evidence of syphilis. I was then attached to the yaws commission under the government of Jamaica and the Rockefeller Foundation. Subsequent work in charge of a dermatologic clinic at the Kingston General Hospital, where yaws is seldom seen but syphilitic lesions are encountered more often, should add weight to the points submitted.

DISTRIBUTION OF LESIONS

The incidence of juxta-articular nodules is considerably higher in females (91 cases) than in males (37 cases), in spite of the fact that the incidence of yaws is higher in males than in females. Lesions were observed in only 9 children (6 girls and 3 boys) under 14 years of age and altogether in only 20 persons of less than 20 years of age. The tiny nodules may be seen or felt as early as one to two years (3 cases) after infection with yaws or as late as fifty to sixty years (1 case), but these are the exceptions rather than the rule. The usual period observed before onset of juxta-articular nodules after infection is fifteeen to forty years, with the average time nearer the lower figure. Juxta-articular nodules, although late tertiary lesions, are sometimes observed accompanying other lesions of the tertiary or even the secondary stage of yaws (23 instances).

In 1 such case of juxta-articular nodules (occurring nine years after the primary infection) associated with osseous lesions, roentgen examination showed inflammatory osseous lesions of the yaws type as follows: A destructive lesion involving the distal end of the fourth right metacarpal bone, with periosteal thickening; cortical thickening of the upper two thirds of the right radial and ulnar bones; partial destruction of the shaft of the second left metatarsal bone with proliferation of the periosteum, and thickening of the distal end of the left tibia with areas of rarefaction in the cortex.

There were juxta-articular nodules overlying or in close proximity to each of the bones affected. This association of osseous lesions with juxta-articular nodules is, perhaps, not more frequently observed because of the usual earlier onset of osseous lesions following infection. As both types of lesions, however, occur in tissues of mesodermal origin, their manifestation in the same patient is not surprising. The epidermis is not involved or attached to these tumors.

The 128 patients had a total of 228 nodules. Thus, while some patients had 1 or 2 nodules only, others had several. Table 1 shows the location of the nodules.

WASSERMANN REACTION

Of 128 patients with juxta-articular nodules, 110 gave a previous history of yaws and 18 gave no previous history of such infection. The Wassermann reactions of 112 patients were positive and those of 7 were negative, while for 9 no Wassermann reaction was obtained. Four of the patients with negative serologic reactions gave a previous history of yaws, but 3 of these had had some form of treatment and the fourth was an old man with a history of yaws fifty-two years previously. Of the 18 patients with no previous history of yaws, 14 had positive serologic

reactions and the lesions of all 14 showed some response to specific treatment, while 3 patients with negative serologic reactions had treatment but showed no response to specific treatment. The fourth patient with a negative serologic reaction did not receive treatment.

It was decided that patients with nodules resembling juxta-articular nodules who gave no history of yaws or syphilis and whose serologic reactions were negative should be advised to have surgical rather than specific treatment.

TABLE 1.—*Location of Juxta-Articular Nodules*

	No. of Nodules
Near both elbow joints	46
Near left elbow joint alone	28
Near right elbow joint alone	21
Near both knee joints	36
Near left knee joint	24
Near right knee joint	23
Near ankle joints (both external malleoli 3; right external malleolus only, 10; left external malleolus only, 4)	17
Near finger joints	8
Along shaft of left ulna (2 to 6 inches [5 to 15 cm.] below olecranon process)	6
Near tibial tuberosities	6
Near trochanters	5
Near tarsometatarsal joints	2
Near temporomandibular joints	2
Near sternoclavicular joint	2
Near right shoulder joint	1
Near ischial tuberosity	1
Total	228

TREATMENT

Juxta-articular nodules seem to occur more frequently in patients who obtained no treatment (or in a few cases only one, two or three injections) for the primary or secondary stage of the disease. Only 21 of the 128 patients had had any previous treatment; 6 of these had had only one injection and 8 others only two injections. The incidence of juxta-articular nodules was therefore highest in yaws-endemic areas farthest removed from treatment facilities (where it may approximate 1 per cent) and lowest in areas where treatment is being followed up regularly (where the incidence may be as low as 0.25 to 0.5 per cent of the total number of infected persons). The nodules were rarely found in areas with little or no yaws; nodules found in patients in such areas could usually be traced to infection with syphilis.

TABLE 2.—*Results of Treatment of Juxta-Articular Nodules*

Period of Observation, Months	Lesions Disappeared, No. of Cases	Lesions Became Smaller, No. of Cases	No Effect, No. of Cases	Total No. of Cases
6	7	25	18	50
12	6	3	1	10
18	2	1	1	4
24	3	4	1	8
Total				72

The response to specific treatment was definite although slow and long drawn out. Treatment with bismuth subsalicylate (10 per cent in olive oil) was quite as effective at least as treatment with neoarsphenamine. The rate of subsidence of lesions is usually proportional to their duration before treatment is sought. Small nodules of from one to three years' duration may be expected to disappear within six to twelve months.

Table 2 presents the results obtained in a series of 72 cases.

IMPETIGO HERPETIFORMIS IN THE MALE

REPORT OF ONE CASE WITH RESPONSE TO SULFAPYRIDINE

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The world literature dealing with impetigo herpetiformis appears to be no less confused than it is confusing. In Jadassohn's Handbuch, Riecke listed twelve synonyms [1] for Hebra's original term, a rather formidable group of names for a disease as infrequently encountered as the one in question.

Although few writers in the United States or abroad appear to feel constrained to limit their conception of impetigo herpetiformis to Hebra's original postulates for the diagnosis of this disease, it might be in order to quote from his original description of the 5 cases to which he first applied the term. All of his patients were pregnant women, 4 of whom died while under his observation (autopsies on all 4 showed no certain cause of death), while the fifth died during a relapse in a subsequent pregnancy. In 1872 he wrote [2]: "I will describe an eruption of the general surface occurring in pregnant and puerperal women. The eruption is characterized by pustules which are filled with pus at their first appearance. As from the very first it is a pustular disease, it must be regarded as a form of impetigo, and may from its circular mode of grouping be termed impetigo herpetiformis."

Kaposi, in the 1883 edition of his "Pathology and Treatment of Skin Diseases," [3] stated that 11 cases of impetigo herpetiformis (including Hebra's original 5 cases) had been observed at the Vienna General Hospital. The patients were all pregnant women, late in gestation: 10 of them died, while the 1 who recovered died during her third relapse, in her third pregnancy. In 1887 Kaposi [4] reported 2 more cases which terminated fatally, in 1 of which the patient was a male.

Subsequent references [5] to Hebra's original description stress the following characteristics, which have come to be known as "Hebra's postulates": 1. Pustules are filled with pus from their first appearance. 2. Vesicles or circles of vesicles are never present. 3. Pustules are arranged in groups or rings, which by drying turn into yellow flat crusts, underneath which the skin is red and moist, having the appearance of eczema rubrum madidans, but never ulcerating. 4. On the periphery of the primary eruptions, new groups and rings of pustules form. 5. Fever and great prostration are present; severe outbreaks are sometimes preceded by rigors. (Many later cases, otherwise characteristic, have been reported which lack these symptoms, however.) 6. Itching is inconsequential. 7. Involved areas heal with an unusual reddish brown pigmentation. 8. All of Hebra's and Kaposi's patients except 1 male, were women late in pregnancy.

Characteristics more recently pointed out, which do not conflict with Hebra's and Kaposi's conceptions, include the following [4]: 1. Contents of pustules and blood are always sterile on culture. 2. The majority of children born of mothers affected with the disease die soon after birth, their skins always free from evidence of the eruption. 3. All attempts to prove the disease to be on an infectious or toxic basis have failed, although Milian (alone) obtained a "positive result" by inoculating contents of a pustule into a rabbit's cornea. 4. There is frequently associated hypocalcinosis with occasional clinical tetany.

Since Kaposi's last report, cases have been reported [4] as instances of impetigo herpetiformis occurring in virgins,[5] nonpregnant women, climacteric women,[6] men [7] and boys.[8]

Presented at the Annual Session of the Section on Dermatology and Syphilology of the California Medical Association at Del Monte, Calif., May 5, 1941.

1. Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol 7, pt. 2: herpes vegetans (Auspitz); herpes impetiginosis (Auspitz); herpes circinatus (Barensprung); erythema annulare (Barensprung); herpes pyaemicus s. puerperalis (Neumann); dermatitis multiformis (Fox); dermatitis neurogenica (Sherwell); *dermatite pustuleuse circinée et excentrique* (Besnier-Doyon); *dermatite pustuleuse en foyers, à progression excentrique* (Hallopeau); dermatitis herpetiformis pustulosa, pustular variety (Duhring); impetigo circinata et iris (Breier); *generelle Hautpustulose* (Freyhan).

2. von Hebra, F.: Wien. med. Wchnschr. **32**:1197, 1872; Lancet **1**:399, 1872; Am. J. Syph. 156, 1873.

3. Duhring, L. A.: Am. J. M. Sc. **88**:391, 1884.

4. Tenlen, S.: Acta dermat.-venereol. **18**:165, 1937.

5. Heitzmann, C.: Arch. Dermat. **4**:37, 1878. von Hebra.[2]

6. Beron: Arch. f. Dermat. u. Syph. **160**:78, 1930.

7. Wohlstein, E.: Dermat. Wchnschr. **93**:1888, 1931.

8. Schreiner, cited by Cedercreutz, A.: Acta dermat.-venereol. **20**:403, 1939.

If one examines the case reports in the literature which have been labeled impetigo herpetiformis, one is impressed by the large number which are obviously cases of either dermatitis herpetiformis (Duhring) or pustular psoriasis. The confusion apparently began when Duhring [9] maintained that impetigo herpetiformis as described by Hebra was identical with the pustular form of dermatitis herpetiformis which he had described. He set forth the characteristics of the latter disease, then cited Hebra's description of the former and, to bridge the obvious gap between them, blandly stated that "Hebra's account is not complete, and if it were, it would probably bring out the multiformity of lesions." He had previously reported as a case of impetigo herpetiformis an obvious case of dermatitis herpetiformis [10] in a pregnant woman, characterized by a multiform eruption of wheals, vesicles, blebs and pustules with violent itching. Since that time, many cases of Duhring's disease have been reported as instances of impetigo herpetiformis.[11]

Pustular psoriasis has also added its share of confusion. Leszczyński [12] reported 4 cases of impetigo herpetiformis, in 2 of which, according to his own case histories, the patients had psoriasis with palmar lesions and arthropathies before, during and after the pustular attacks.

A great variety of therapeutic procedures have been enthusiastically advanced as being specifically indicated. Such is the diversity in the nature of the agents credited with spectacular cures that one is inclined to wonder if all of the diagnoses were justifiable and whether spontaneous remission was a coincidental blessing in many cases. Blood transfusion,[13] roentgen ray sterilization,[14] ovarian extracts (folliculin),[15] pituitary preparations (gonadotropic hormones),[4] parathyroid extracts with dihydrotachysterol [16] and sulfanilamide [17] have each been reported as curing impetigo herpetiformis. In the case which is to be reported herewith, blood transfusions, dihydrotachysterol, sulfanilamide, sulfathiazole and neoarsphenamine were all tried without effecting a cure, while sulfapyridine alone seemed to bring about a remission.

REPORT OF A CASE

C. A., a 61 year old single man of Nordic extraction, who had been in perfect health until December 1938, sustained multiple fractures and contusions in a serious automobile accident; while he was in the hospital recovering from the trauma, lobar pneumonia developed. It was found to be of type 7 and was treated with appropriate serum. Shortly after he left the hospital, on recovery, the first cutaneous lesions were noticed in the axillas (fig. 1) and were of a type remaining consistently true to form throughout the entire course of the disease. The characteristic lesions were groups of rapidly appearing small pustules which

Fig. 1.—Appearance of an axilla at the time of the first observation. The other axilla was similarly involved.

tended to spread peripherally, with an overhanging epidermal collaret if the original pustule had been ruptured or as a pustular undermining of the epidermis if the original pustule had been allowed to dry and crust over without rupturing (fig. 2). From the time of onset until he was seen by me on March 30, 1940 (a period of fifteen months), cutaneous lesions had been consistently present in the axillas, while the sides and back of the neck and the sides of the trunk were affected much of the time but were clear part of the time. For a week or so before my first observation, the eruption had been becoming more extensive, involving the groins, front of the trunk and arms for the first time. There was little or no itching.

On March 30, 1940 both axillas, groins and sides of the neck showed a continuous red area consisting of many wandering polycyclic lines of undermined epithelium (fig. 1) and occasional yellowish crusts. There were a few scattered pustules, thin walled and only

9. Duhring, L. A.: J. Cutan. & Ven. Dis. **2**:225, 1884.[3]

10. Duhring, L. A.: M. News, Philadelphia **42**:616, 1883.

11. Carter, B., and Pearse, R. L.: Am. J. Obst. & Gynec. **33**:114, 1937. Chambers, G.: Brit. J. Dermat. **23**:65, 1911.

12. von Leszczyński, R.: Arch. f. Dermat. u. Syph. **156**:102, 1928.

13. Prokoptschuk and Baranowsky: Dermat. Wchnschr. **96**:66, 1933; abstracted, Arch. Dermat. & Syph. **27**:839 (May) 1933. Scherber, G.: Wien. med. Wchnschr. **80**:717, 760 and 804, 1930.

14. Grütz, O.: Strahlentherapie **35**:501, 1930. Schreiner.[8]

15. Buschke, A., and Boss, A.: Dermat. Wchnschr. **93**:1394, 1931; abstracted, Arch. Dermat. & Syph. **25**: 382 (Feb.) 1932.

16. (*a*) Schmidt-La Baume, F.: Med. Klin. **33**:1590, 1937. (*b*) Scherber, G.: Dermat. Wchnschr. **106**:391, 1938; abstracted, Wise, F., and Sulzberger, M. B.: Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers, Inc., 1938, p. 399. (*c*) Bohnstedt, R. M.: Arch. f. Dermat. u. Syph. **169**:357, 1933. (*d*) Bartmann, J.: ibid. **175**:93, 1937; abstracted, Wise, F., and Sulzberger, M. B.: Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers, Inc., 1937, p. 221. (*e*) Schubert, M.: Dermat. Wchnschr. **102**:761, 1936.

17. Frank, L. J.: Impetigo Herpetiformis, Arch. Dermat. & Syph. **40**:253 (Aug.) 1939.

slightly elevated, containing pale yellowish white pus, which were said to have been filled with pus from their earliest formation. The inner sides of the arms, flexor surfaces of the elbows and sides of the trunk were similarly but not continuously affected. Scattered ruptured and crusted individual lesions, each with an erythematous halo, were found on the front and back of the trunk.

Laboratory observations at that time were as follows: Pus from intact lesions was sterile by direct examination and culture. The Eagle and Kline reactions of the blood were negative. A blood count showed: hemoglobin content, 94 per cent; red cells, 4,600,000 (color index 1); white cells, 12,500, of which 85 per cent were polymorphonuclear leukocytes, 11 per cent lymphocytes, 1 per cent eosinophils, 1 per cent basophils and 2 per cent mononuclear leukocytes. The polymorphonuclear leukocytes showed slight toxic granulation. Urinalysis showed an acid reaction, specific gravity of 1.025, a faint trace of sugar, no acetone, considerable albumin (3 plus) and a few coarsely granular casts and numerous red blood cells.

Treatment during the first ten days consisted of wet dressings of solution of aluminum acetate (1:16) alternating with boric acid baths and 2 per cent ammoniated mercury ointment. Unfiltered roentgen irradiation (50 r) was given on the first and fourth days of treatment. Although the patient showed some improvement during the first week, he was definitely worse by the tenth day, badly broken out, toxic and with a temperature of 102 F.; sulfanilamide was administered in a dosage of 60 grains (3.88 Gm.) per day (with sodium bicarbonate). Improvement was immediate and definite, new lesions appearing in smaller numbers and as smaller lesions. The improvement in the condition of the urine closely paralleled the improvement in the eruption, and by the twentieth day no new lesions were appearing and the urinalysis showed no sugar, no albumin, 1 hyaline cast, 1 to 3 white cells and 30 to 40 red cells per high power field.

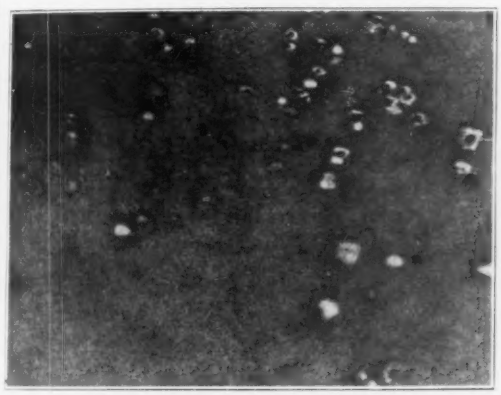

Fig. 2.—Detail of new axillary lesions, showing central crusting with peripheral progression of the pustular process.

Although sulfanilamide was continued in the same dosage, new lesions began to appear on the twenty-third day and the albumin and red cells in the urine began to increase. On the twenty-sixth day the dose of sulfanilamide was increased to 80 grains (5.2 Gm.) per day, but in spite of this the patient was showing many lesions by the thirtieth day and was sick with nausea, general malaise and a temperature of 101.8 F. On the thirty-first day use of sulfanilamide was discontinued; administration of nicotinic acid (50 mg. three times daily) was started, and 2 calcium wafers (15 grains [0.97 Gm.]) with viosterol three times daily, use of which was begun on the twenty-ninth day, were continued. During the preceding twenty-one days 1,340 grains (90 Gm.) of sulfanilamide had been given, an average of 64 grains (4.14 Gm.) daily.

By the thirty-third day the patient's condition was the worst that it had ever been, showing many lesions up to 2 cm. in diameter, which were large, but not tense; the urinalysis showed 90 to 100 red cells, 1 to 3 white cells per high power field and a trace of albumin. Sulfanilamide was started again with 100 grains (6.5 Gm.) per day with nicotinic acid 50 mg. three times daily; after three days with this dosage the sulfanilamide level of the blood was 4.5 mg. per hundred cubic centimeters. A blood count showed: hemoglobin content 70 per cent, red cells 3,360,000 and white cells 11,650, with polymorphonuclear leukocytes, 82 per cent and lymphocytes 18 per cent; the urinalysis showed 90 to 100 red cells and a rare finely granular cast per high power field and a trace of albumin. The skin showed little improvement, and the dose of sulfanilamide was increased to 120 grains (7.8 Gm.) per day.

During the next five days with this dosage, the sulfanilamide level rose to 8.6 mg. per hundred cubic centimeters of blood, while the hemoglobin content fell to 60 per cent and the red blood cells to 2,240,000 per cubic millimeter and the leukocytes to 5,550, 64 per cent being polymorphonuclear. At the end of this period only five tiny pustules were present on the skin. The dose of sulfanilamide was then raised to 150 grains (9.7 Gm.) daily (with nicotinic acid), and during the next three days practically no new lesions appeared; but immediately thereafter new lesions began to appear in the axillas and groins. A week later, although the dose of sulfanilamide was kept at 150 grains per day and the level of the drug in the blood stream was 12 mg. per hundred cubic centimeters, the patient was badly broken out with large pustules scattered over arms, legs and trunk. He was given two transfusions of citrated blood. At that time the blood chloride level was 490 mg. and the serum calcium level 9.3 mg. per hundred cubic centimeters of blood, and blood taken for culture proved sterile.

Administration of dihydrotachysterol was then begun with a dose of 15 drops of a 0.5 per cent solution in oil two times daily, and sulfanilamide was discontinued. During the preceding twenty-one days the patient had received 2,690 grains (180 Gm.) of sulfanilamide, an average of 128 grains (9.3 Gm.) daily for three weeks. On the next day he was badly broken out and toxic; the urinalysis showed 100 to 120 red cells, 2 to 3 white cells and a few red cell casts per high power field and a 2 plus reaction for albumin. The blood count showed: 65 per cent hemoglobin, 3,410,000 red cells and 8,950 white cells, with 89 per cent polymorphonuclear leukocytes, 50 per cent of which were stab cells. Sulfapyridine was started with a dose of 45 grains (2.91 Gm.) per day; on the next day the eruption was unchanged and the urinalysis was unchanged except for numerous bacteria, all of which were gram-positive diplococci. The dose of sulfapyridine was doubled, to 90 grains (5.82 Gm.) per day, while the dose of dihydrotachysterol was decreased to 15 drops per day. On the following day there were fewer new lesions and the blood calcium level was 10.7 mg. per hundred cubic centimeters of blood;

the blood was again cultured (and proved to be sterile). Urinalysis showed 80 to 90 red cells, 3 to 4 white cells per high power field and a trace of albumin. Two days later there were no new lesions, and the urinalysis showed only 7 to 10 red cells, an occasional red cell cast and 2 to 3 white cells per high power field. The sulfapyridine level was 4.2 mg. per hundred cubic centimeters of blood; the patient was given a third blood transfusion similar to the other two.

Two days later he still showed no new lesions, but he was disoriented as to place and time; acetophenetidin compound (containing codeine), which had been given for restlessness, was withdrawn, the use of dihydrotachysterol was discontinued and the dose of sulfapyridine was reduced to 45 grains (29.1 Gm.) per day. He continued doing well until a week later, when a few tiny miliary pustules on the side and back were noticed; the dose of sulfapyridine was increased to 67.5 grains per day. During the next six days he showed a few follicular papulopustules similar to miliaria, mostly on the outer and posterior aspects of the arms, and the dose of sulfapyridine was reduced to 45 grains per day; the urinalysis gave completely normal results except for a rare red cell. Six days later, however, in addition to the miliaria-like lesions described, there appeared a scattering of typical flat peripherally spreading pustules of the original type. During the preceding eighteen days he had received 1,157 grains (77 Gm.) of sulfapyridine, an average of 64 grains per day.

Sulfathiazole (67.5 grains [4.37 Gm.] per day) was then substituted for sulfapyridine; the next day there was a severe outbreak of the old type of lesions. At this time the sulfapyridine level was 3.8 mg. per hundred cubic centimeters of blood, from which the sulfathiazole level was estimated to be about 4.5 mg. per hundred cubic centimeters of blood. That evening he was given six doses of 0.1 Gm. of neoarsphenamine at one hour intervals, which was well tolerated. On the following da new lesions were appearing rapidly and sulfapyridine was substituted for the sulfathiazole in the same dosage improvement was noticed on the next day, and five day after use of sulfapyridine was resumed there were no new lesions and the patient looked and felt well.

During the following two weeks the dosage of sulfapyridine was raised and lowered in a descending progression of peaks, each recrudescence of lesions dis appearing with a smaller increase in dosage than the previous outbreak had required. During the last three weeks of treatment with sulfapyridine he received 1,20 grains (80 Gm.), an average of 60 grains (3.88 Gm. per day.

During the next ten days, administration of sulfapyridine was discontinued whenever the skin was clear and was resumed for twenty-four hours or so whenever any pustules appeared. At the end of this period (July

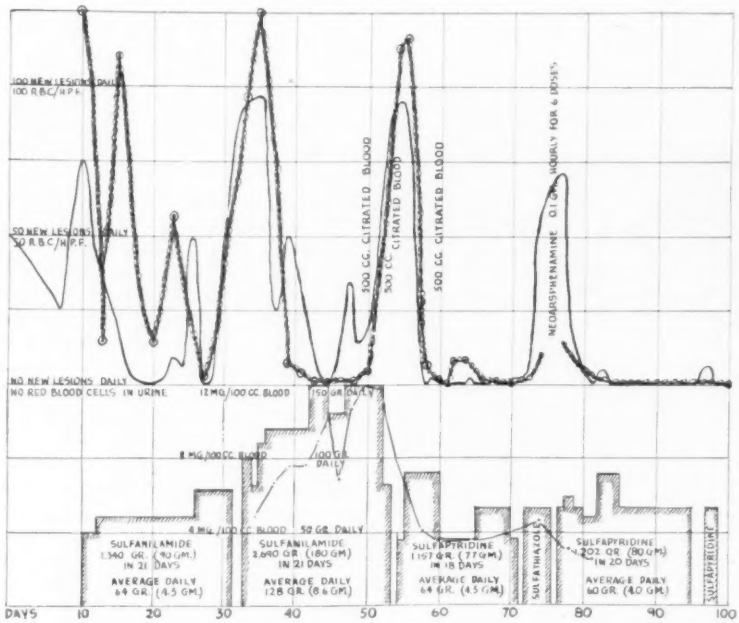
100 NEW LESIONS DAILY
100 R.B.C./H.P.F.
50 NEW LESIONS DAILY
50 R.B.C./H.P.F.
NO NEW LESIONS DAILY
NO RED BLOOD CELLS IN URINE
12 MG./100 CC. BLOOD
150 GR. DAILY
8 MG./100 CC. BLOOD
100 GR. DAILY
4 MG./100 CC. BLOOD
50 GR. DAILY
500 CC. CITRATED BLOOD
500 CC. CITRATED BLOOD
500 CC. CITRATED BLOOD
NEOARSPHENAMINE 0.1 GM. HOURLY FOR 6 DOSES
SULFANILAMIDE 1,340 GR. (90 GM.) IN 21 DAYS
AVERAGE DAILY 64 GR. (4.5 GM.)
SULFANILAMIDE 2,690 GR. (180 GM.) IN 21 DAYS
AVERAGE DAILY 128 GR. (8.6 GM.)
SULFAPYRIDINE 1,157 GR. (77 GM.) IN 18 DAYS
AVERAGE DAILY 64 GR. (4.5 GM.)
SULFATHIAZOLE
SULFAPYRIDINE 1,202 GR. (80 GM.) IN 20 DAYS
AVERAGE DAILY 60 GR. (4.0 GM.)
SULFAPYRIDINE
DAYS 10 20 30 40 50 60 70 80 90 100

Fig. 3.—Correlation between frequency of appearance of new lesions (solid line) and number of red blood cells in the urine (beaded line). Remission followed the start of therapy with sulfanilamide, but recrudescences occurred while the patient was receiving high doses of sufanilamide and sulfathiazole; remission followed exhibition of sulfapyridine on three occasions, and no recrudescences occurred while treatment with that drug was being given.

15, 1940) the patient was discharged with his skin clear except for a fine papular miliaria-like eruption, without pus, on the back of his arms and a pronounced reddish brown pigmentation of the formerly affected areas (fig. 4). The urine was normal, and the blood count showed 70 per cent hemoglobin, 3,660,000 red cells and 6,15 white cells, with 75 per cent polymorphonuclear leukocytes. Since that time he has had an occasional pustule or two, which have disappeared after one or two doses of sulfapyridine, the periods of freedom from eruption becoming longer and longer.[18]

18. In August 1940 the patient disappeared from observation until December 1943, when I was informed that he had died of what was thought to be either a dissecting aneurysm or a posterior coronary occlusion following a bilateral herniotomy. No autopsy was performed. It

(Footnote continued on next page)

Other laboratory work that was done included a serologic test for tularemia (at the patient's request) and flat roentgenograms of the kidneys, all of which showed normal conditions. The specific gravity of the blood was 1.0524 (normal, 1.0566); the specific gravity of the plasma was 1.0262 (normal, 1.0254 to 1.0288); the cell volume was 0.40 (normal, 0.48) and the plasma protein level was 6.56 Gm. per hundred cubic centimeters of plasma (normal, 5.9 to 7.9 Gm.).

COMMENT

In view of the lack of uniformity in the criteria applied by various writers to the diagnosis of impetigo herpetiformis, it is difficult to decide the classification of the case just reported. To bring order out of the confusion which has come

Fig. 4.—Residual pigmentation after healing of all lesions. Similar pigmentation was present in the crural regions.

to complicate the conception of this disease, two alternatives are suggested: either (1) that the term "impetigo herpetiformis" should be reserved for eruptions which conform to Hebra's original description, or (2) that this conception should be broadened to include eruptions which are morphologically and symptomatically consistent with Hebra's criteria for the diagnosis, regardless of whether or not they occur in pregnant or puerperal women. If the latter alternative is allowed, the case reported might be considered one of impetigo herpetiformis in a male; if the former, and stricter, limitation of the term is to be applied, the case in question may have to be considered as an instance of a clinical entity not previously described.

was reported to me that the patient had suffered no recurrence of pustular lesions and had taken no sulfonamide compounds in the interim.

SUMMARY

Reference to the American and English literatures and to available translations of the foreign literature on the subject of impetigo herpetiformis reveals a rather confused state of affairs. Hebra applied the term to an acute purely pustular eruption with grave systemic involvement occurring in pregnant and puerperal women and generally fatal. Kaposi, adding to Hebra's series, included a case of the eruption occuring in a male. Since that time, a great many cases have been reported as instances of impetigo herpetiformis "of Hebra" which had little to justify that diagnosis and much to justify other diagnoses, particularly dermatitis herpetiformis and pustular psoriasis.

A great diversity of therapeutic measures have been credited with curing various eruptions diagnosed as impetigo herpetiformis, but no single line of therapy has been effective in more than a few cases, except dihydrotachysterol when hypocalcemia could be demonstrated.

A case is presented which conforms well, morphologically and symptomatically, with the criteria for the diagnosis of impetigo herpetiformis as described by Hebra; but the disease occurred in a man, and it ran a far longer course than any previously described. Hypocalcemia was not demonstrated, and remissions were obtained when sulfapyridine was used after blood transfusions, dihydrotachysterol, sulfanilamide, sulfathiazole and neoarsphenamine had failed.

If Hebra's original conception of this disease may be broadened to include males and to admit of certain variations in the clinical course, then the case presented may be considered one of impetigo herpetiformis in a man.

If, on the other hand, the term impetigo herpetiformis is to be reserved for cases which conform strictly to Hebra's description, then the case presented awaits proper classification.

710 Wilshire Boulevard.

DISCUSSION

Dr. Nelson Paul Anderson, Los Angeles: Since I had the opportunity of personally examining Dr. Hall's patient shortly after the onset of the eruption, it is a privilege to be allowed a few remarks concerning this rather unique case. I feel certain that similar cases, although relatively rare, have been observed by other members of this section. In most instances one is content to label such an eruption an unusual type of impetigo or an impetigo produced or accompanied by a generalized sepsis.

Confusion regarding Hebra's original cases of impetigo herpetiformis arose almost immediately after his original

publication. Duhring, who was jealous of his newly christened dermatitis herpetiformis, immediately rushed into battle maintaining that the cases of Hebra were simply instances of pustular dermatitis herpetiformis. This confusion not only has persisted to the present time but seems to have grown worse with age.

In a more or less cursory review of the literature on this subject, I have been struck by the fact that if the feature of pregnancy is excluded and if obvious cases of gestation herpes—which, after all, are simply cases of dermatitis herpetiformis occurring in pregnancy—are not included there is a separate group of cases similar to that of the patient described so well by Dr. Hall. In all cases of this group there appear to be certain features which permit one to place them in a separate group. These features include the following:

1. Pregnancy is not a factor, nor is sex. Cases have been reported of occurrence of the eruption in nonpregnant women, in virgins and in males. In fact, the first recorded instance of impetigo herpetiformis in a male was by Kaposi.

2. Etiologically a great majority of these eruptions have followed some serious infection. In Dr. Hall's patient as well as in a number of those whose cases have been presented in the literature there had occurred a serious pneumonia. In other instances an empyema, a mediastinal abscess or a mediastinal tumor has been present. I recall a recent case at the Los Angeles County General Hospital in which a somewhat similar, though not identical, eruption followed severe pneumonia. The bacteriologist was unable to determine the type of organism producing the pneumonia. It was obviously not pneumococcic pneumonia.

3. The patients are seriously ill. They look and appear toxic. They have a septic temperature, but the blood and the pustular contents are always sterile on culture.

4. The eruption is pustular from the beginning; the lesions come out in crops and are symmetrically distributed and grouped. The individual pustules are usually impetigo-like and occasionally varioliform, as shown clearly in Dr. Hall's photographs.

All of these features considered together make me feel that whatever this entity may be it is an entity. As such, it can be differentiated from ordinary impetigo, dermatitis herpetiformis, pustular psoriasis and Kaposi's varioliform eruption. For the time being, I concur with Dr. Hall in placing this case in the category of cases of impetigo herpetiformis, with full appreciation of the fact that perhaps as knowledge increases one may come to realize that it belongs to an entirely separate, though perhaps related, group.

PRURIGO OF HEBRA (SEVERE TYPE)

BEN KANEE, M.D.

VANCOUVER, BRITISH COLUMBIA, CANADA

The omission of prurigo ferox as a specific entity in the official list of the "Standard Nomenclature of Disease and Standard Nomenclature of Operations," [1] published in 1942, is evidence of its rarity in North America.[2] The disease has always been relatively uncommon in the United States. The past twenty years has seen its virtual disappearance from private practice as well as from large dermatologic clinics. This observation has been confirmed by MacKee [3] and Wise.[3] The statistics of the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital from 1935 to 1942 inclusive record but a single case in over 700,000 admissions. Dr. Max Jessner,[3] head of the large Breslau Clinic until 1935, has stated that it is his impression that the same infrequency prevailed there. Therefore the following case is presented to add to the list of previously reported cases of this rare dermatosis.

REPORT OF A CASE [4]

History.—J. K., an American-born white youth aged 18, excitable and mentally alert, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on Nov. 15, 1943. He was complaining of a generalized pruritic eruption of eleven years' duration, beginning at the age of 6 years. For the past eleven years the eruption had relapsed with the onset of warm weather and had improved greatly during the winter months; his present attack, however, has continued throughout the winter. The sites of predilection are the extensor surfaces of the upper and lower extremities (fig. 1). No family history of atopy was elicited. Scratch and intradermal tests four years ago elicited negative reactions. An elimination diet and topical medication have been of no avail.

Present Condition.—1. Upper extremities: On the extensor surfaces of the arms and forearms there is a scattered eruption, characterized by isolated excoriated, hemorrhagic and crusted lesions. There are scratch marks and patches of pigmentation and lichenification. The primary lesion is a small hard papule. A few urticarial lesions are present. The flexor surfaces are completely spared. The axillary lymph nodes are enlarged.

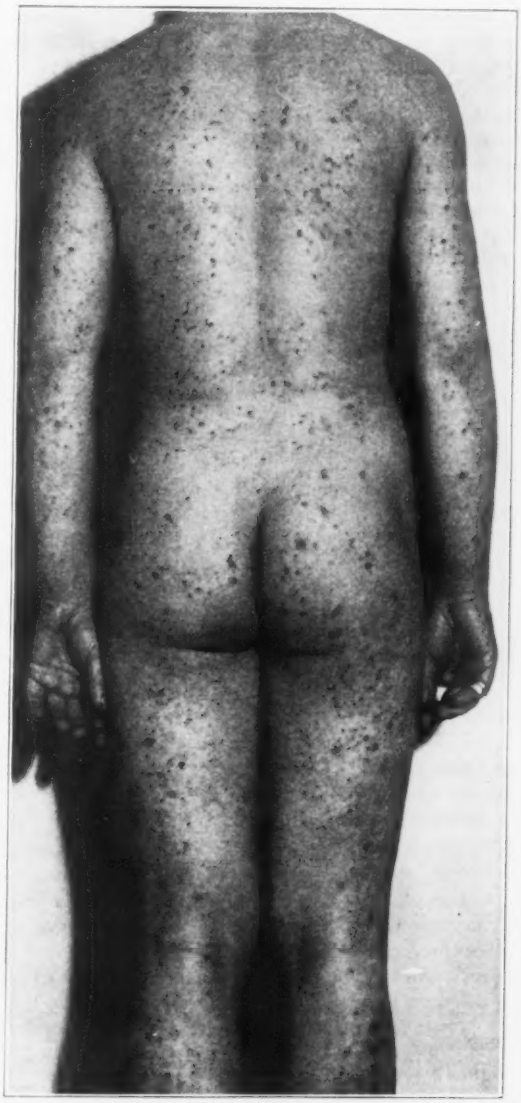

Fig. 1.—Lesions on the extensor surfaces of the upper and lower extremities and back. Note the sparing of the popliteal spaces.

2. Lower extremities: The anterolateral surfaces of the thighs and legs show a diffuse papular eruption. Most of the lesions are excoriated, and they are almost

From the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University.

1. Standard Nomenclature of Disease and Standard Nomenclature of Operations, Chicago, American Medical Association Press, 1942.

2. Fox, H.: Standard Nomenclature of Disease, Arch. Dermat. & Syph. **46**:534 (Oct.) 1942.

3. Personal communication to the author.

4. Presented before the New York Dermatological Society, Nov. 23, 1943.

twice the size of those on the upper extremities. There are many papulopustular lesions as well as some papulofollicular lesions capped with a vesicle; there also are wheals. Secondary pyoderma of the lower extremities stands out in contrast to its absence on the upper extremities. The popliteal spaces are completely spared. The inguinal nodes are enlarged.

3. Back: On the back there is a diffuse eruption characterized by urticarial, papular and papulovesicular lesions, many of which are excoriated, and there are numerous scratch marks.

4. Face: The face shows lesions of acne vulgaris.

Laboratory Data.—The result of the examination of the blood was as follows: hemoglobin content 78 per cent, red cells 4,700,000 per cubic millimeter and white cells 7,050 per cubic millimeter with polymorphonuclear neutrophils 41 per cent, polymorphonuclear eosinophils 8 per cent, lymphocytes 44 per cent, monocytes 6 per cent and band forms 1 per cent.

The basal metabolic rate was —2 per cent. Studies of blood chemistry for sugar and calcium contents gave the following values: dextrose, 60 mg. per hundred cubic centimeters and calcium 11.4 mg. Urinalysis gave normal results. Results of scratch and intradermal tests for allergic reactions to foods, epidermal substances and pollens were negative.

Histologic Study.—A papule was excised for histologic study. The histologic report by Dr. Wilbert Sachs was as follows: "The vessels in the middle and upper parts of the cutis are moderately dilated, and about them is a rather pronounced focal cellular infiltration. In the subepidermic region there is a mild interstitial edema. In the deep and in the upper layers of the cutis there is a pronounced parenchymatous edema with a swelling of the collagen bundles and a diffuse sparse infiltration of fibroblasts.

"The epidermis in some areas is only moderately acanthotic. The surface is somewhat verrucous and covered by a moderate densely laminated horny layer. The palisade layer is intact, and there is little or no edema in the epidermis.

"The cellular infiltration is composed of small round cells, wandering connective tissue cells and polymorphonuclear leukocytes."

Diagnosis.—The eruption was considered to be a neurodermatitic reaction compatible with the diagnosis of prurigo of Hebra.

Treatment and Subsequent Course.—Because of the urticarial element the patient was given a course of injections of histamine phosphate subcutaneously. This was followed by a course of four weekly roentgen ray treatments (75 r unfiltered) to the upper and lower extremities. After this and after a trial of various topical medicaments, including sulfur and tar, without improvement, the patient was hospitalized for fever therapy; namely, intravenous injections of typhoid-paratyphoid vaccine. There has been but little change in the eruption over a period of three months. Improvement has been noted at various times, followed by relapse.

REVIEW OF THE AMERICAN LITERATURE

The first indigenous American case of prurigo of Hebra was reported in 1873 by Wigglesworth.[5] At the first meeting of the American Dermatological Association, in 1877, a typical case was presented by Campbell[6]; the report was published in 1878. In 1887 Piffard[7] reported the case of a woman aged 50 with a twenty year history of the disease. Between 1889 and 1925 cases were reported by the following authors: Tilden,[8] Zeisler[9] (a report of 12 cases observed over a period of five years), G. H. Fox,[10] Elliott,[11] Sherwell,[12] Taylor,[13] Cutler,[14] Jack-

Fig. 2.—Extensor surface of a forearm and arm, showing excoriated lesions and patches of pigmentation and lichenification.

5. Wigglesworth, E., Jr.: A Case of Prurigo Ferox Universalis with Remarks, Am. J. Syph. & Dermat. **4**:21, 1873.

6. Campbell, R.: A Case of True Prurigo (of Hebra), Arch. Dermat. **4**:119, 1878.

7. Piffard: Prurigo of Hebra, J. Cutan. & Genito-Urin. Dis. **5**:150, 1887.

8. Tilden: Prurigo, J. Cutan. & Genito-Urin. Dis. **7**:471, 1889.

9. Zeisler, J.: On the Occurrence of Prurigo in America, J. Cutan. & Genito-Urin. Dis. **7**:408, 1889.

10. Fox, G. H.: Prurigo, J. Cutan. & Genito-Urin. Dis. **8**:105, 1890; A Case of Prurigo, ibid. **13**:383, 1895; A Case of Prurigo, J. Cutan. Dis. **21**:229, 1903.

11. Elliott, G. T.: Prurigo Hebra, J. Cutan. & Genito-Urin. Dis. **9**:222, 1891; A Case of Prurigo of Hebra, J. Cutan. Dis. **23**:544, 1905.

(Footnotes continued on next page)

son,[16] Corlett,[16] Whitehouse [17] (3 cases of prurigo of Hebra occurring in one family), Pisko,[18] Johnston,[19] Fordyce,[20] Trimble,[21] MacKee,[22] Bleiman,[23] Bombert [24] (prurigo of Hebra in five generations of one family), MacKey,[25] Gottheil,[26] Ochs,[27] Clark [28] and Welfeld.[29]

In this review there were 48 cases, in 26 of which the patients were males and in 22 females.

Review of 48 Reported Cases from 1873 to 1925

Reported by	Age, Yr.	Sex	Duration of Disease, Yr.	Character of Disease	Circumstances of Patient	Comment
Wigglesworth, 1873	14	M	8	.....	.....	Frequent relapses
Campbell, 1878	11	M	8	.....	.....	Relapses
Piffard, 1887	50	F	20	Severe	.....	.....
Tilden, 1880	..	..	..	.....	.....	.....
Zeisler, 1889	32	M	32	Mild	Good	Cured by treatment
	7	M	5	Very severe	Very good	Relapses
	3	M	2	Mild	Good	Cured
	20	F	20	Severe	Poor	Relapses
	3	M	2	Mild	Poor	Cured
	3	F	1	Mild	Good	Cured
	22	F	22	Mild	Poor	Cured
	13	M	11	Very severe	Poor	Relapses
	3	F	2	Mild	Fair	Relapses
	12	M	10	Very severe	Poor	.....
	25	M	24	Very severe	Poor	.....
	1½	F	⅔	Mild	Poor	.....
Fox, 1890	8	M	..	.....	.....	.....
Elliott, 1891	16	M	14	Severe	Good	Relapses
Sherwell, 1891	6½	F	4½	Mild	.....	.....
Taylor and van Gieson, 1891	9	F	5	Severe	Poor	.....
Cutler, 1892	11	M	5	Severe	Poor	Worse in winter
Fox, 1895	20	M	18	.....	.....	Worse in summer
Fox, 1903	19	..	2½	Severe	Good	Differential diagnosis (1) scabies (2) dermatitis herpetiformis
Jackson, 1903	7½	F	7	.....	.....	Relapses
Corlett, 1904	6	M	5	.....	.....	.....
	3	F	1½	.....	.....	.....
	9	M	4	.....	.....	.....
Elliott, 1905	11	F	10	.....	.....	.....
Whitehouse, 1906	19	F	18	.....	Fair	Worse in summer
	9	M	9	Severe	Poor	Worse in summer
	6	M	5	Severe	Poor	Worse in summer
Pisko, 1906	11	F	11	Severe	.....	.....
Johnston, 1907	..	M	3	Severe	.....	Differential diagnosis, Duhrings disease
Fordyce, 1908	8	M	4	Severe	.....	Differential diagnosis, scabies
Trimble, 1908	16	M	16	Severe	Poor	.....
	13	F	10	Severe	.....	.....
MacKee, 1911	8	M	6	Severe	Poor	.....
Bleiman, 1913	5	M	4	Severe	.....	.....
Bombert, 1913	56	F	56	.....	.....	Excitable, nervous temperament
	24	M	22	.....	Good	Mentally keen and alert
	2	..	½	.....	.....	.....
	72	F	72	.....	.....	.....
MacKey, 1905	11	M	10½	.....	.....	.....
Gottheil, 1917	15	F	15	.....	.....	.....
Ochs, 1919	11	F	10	Mild	Good	Negro patient; worse in fall
Whitehouse, 1921	13	F	..	.....	.....	.....
Clark, 1925	10	F	10	.....	Good	.....
Welfeld, 1925	15	M	9	.....	.....	Improved in summer

COMMENT

Hebra's original statement was that "prurigo is never congenital, commonly appears during infancy, and usually follows the patient to his grave. It occurs almost exclusively in poor subjects and in those who were undernourished in childhood. The eruption is commoner in males and is usually aggravated during the winter, and remarkably alleviated in the summer."

The diagnosis of prurigo of Hebra is based on the following accepted criteria: 1. It usually appears in infancy. 2. The eruption persists into adult life. 3. The general health is poor. 4. The eruption is of characteristic type, composed of shotty papules coming out in crops accompanied by intense pruritus associated with

12. Sherwell: Prurigo, J. Cutan. & Genito-Urin. Dis. **9**:185, 1891.

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14. Cutler: Prurigo, J. Cutan. & Genito-Urin. Dis. **10**:35, 1892.

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16. Corlett, W. T.: Prurigo (Hebra) as Observed in the United States, J. A. M. A. **43**:296 (July 30) 1904.

17. Whitehouse, H. H.: Three Cases of Prurigo in One Family, J. Cutan. Dis. **24**:177, 1906; Prurigo, Arch. Dermat. & Syph. **3**:194 (Feb.) 1921.

18. Pisko, E.: A Case of Prurigo Hebra, Am. J. Dermat. & Genito-Urin. Dis. **10**:55, 1906.

(Footnotes continued on next page)

excoriations and secondary infections, resulting in punctate scarring, pigmented spots and lichenification. 5. The sites of predilection are (*a*) the extensor surfaces of the upper and lower extremities, with (*b*) sparing of the flexures. 6. The axillary and inguinal lymph nodes are enlarged ("prurigo-buboes").

It will be noted that in my patient the eruption began at the age of 6 years, but this apparently late onset has been observed in cases of true prurigo of Hebra by such reliable European observers as Besnier and Doyon,[30] Ehlers,[31] Vidal,[32] Neisser [33] and Little.[34]

My patient was in good physical condition, as were some of the patients of Kaposi,[35] and his excitable temperament is in agreement with the data given in cases reported by Bombert.[24]

The differential diagnoses entertained in the case were: (1) neurotic excoriations, (2) urticaria papulosa and (3) prurigo of Hebra. However, the character of the eruption (the sites of predilection and sparing of the flexures), the duration and the persistence, in association with absence of a history of atopy and supported by negative reactions to scratch and intradermal tests, favor the diagnosis of prurigo of Hebra. The clinical picture, in combination with the patient's age and the generalized distribution, the duration and the greater intractability of the eruption, rules out the diagnosis of prurigo mitis. Finally, the patient's rejection by the armed forces recalls Hebra's [36] observation "that a patient with prurigo finds his only possible comfort in exemption from military service."

CONCLUSIONS

Although prurigo of Hebra is extremely rare in North America, its occurrence was noted in a young man born in the United States. He had the characteristic eruption in the sites of predilection, which failed to respond to any type of therapy and which persisted well beyond puberty.

No unquestionable case has been reported in the North American literature since 1925.

19. Johnston, J. C.: Prurigo Ferox, J. Cutan. Dis. **25**:84, 1907.

20. Fordyce, J. A.: A Case of Prurigo, J. Cutan. Dis. **26**:316, 1908.

21. Trimble: Prurigo (Hebra), J. Cutan. Dis. **26**: 466, 1908.

22. MacKee, G. M.: Prurigo, J. Cutan. Dis. **29**:109, 1911.

23. Bleiman: Prurigo, J. Cutan. Dis. **31**:510, 1913.

24. Bombert, F. J.: The Prurigo of Hebra in Five Generations, St. Paul M. J. **15**:514, 1913.

25. MacKey: Prurigo, J. Cutan. Dis. **33**:407, 1915.

26. Gottheil: Prurigo Ferox, J. Cutan. Dis. **35**:267, 1917.

27. Ochs: Prurigo Mitis, J. Cutan. Dis. **37**:359, 1919.

28. Clark: Prurigo of Hebra, Arch. Dermat. & Syph. **12**:137 (July) 1925.

29. Welfeld: Prurigo (Hebra), Arch. Dermat. & Syph. **12**:419 (Sept.) 1925.

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31. Ehlers, E.: Communication provisoire concernant une série de recherches cliniques sur le prurigo d'Hébra, Bull. Soc. franç. de dermat. et syph. **3**:403, 1892.

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33. Neisser, A.: Ueber den gegenwärtigen Stand der Lichenfrage, Arch. f. Dermat. u. Syph. **28**:75, 1894.

34. Little, G., in Special Discussion on Prurigo, Lichenification and Allied Conditions, Brit. J. Dermat. **24**:257, 1912.

35. Kaposi, M.: Pathology and Treatment of Diseases of the Skin, translated from last German edition by J. C. Johnston, New York, W. Wood & Co., 1895, p. 367.

36. Hebra, F.: Diseases of the Skin Including the Exanthemata, translated and edited by C. H. Fagge, and P. H. Pye-Smith, London, New Sydenham Society, 1866, vol. 2, p. 253.

SUPERFICIAL EPITHELIOMATOSIS

REPORT OF A CASE

CAPTAIN STEPHEN L. WEISMAN AND LIEUTENANT COLONEL LEON S. MEDALIA
MEDICAL CORPS, ARMY OF THE UNITED STATES

Superficial epitheliomatosis was first clearly described by Little [1] in 1923. However, Wise [2] has stated that prior to that time it was recognized as multiple benign superficial flat epithelioma. Since the original description, great confusion has arisen as to both its clinical features and its histopathologic characteristics. In the case to be reported the patient was a young man whose eruption had existed for ten years, and the case illustrates the difficulty in making the proper diagnosis.

Savatard,[3] in a survey of the literature for the past sixty years, has concluded that because of the protean clinical and histologic manifestations variants of the same eruption have been described as separate diseases. For example, he maintained that mammary and extramammary Paget's disease of the skin, Queyrat's erythroplasia and Bowen's precancerous dermatosis are different forms of the same disease. In Savatard's experience these lesions resembled a psoriatic plaque, and he therefore proposed "psoriasiform carcinoma" as an appropriate clinical designation for the entire group. Montgomery,[4] on the other hand, expressed the belief that superficial epithelioma of the penis, perineum and scrotum, as well as extramammary Paget's disease, consists of indurated lesions and should not be included in this group of diseases. The disease described by Bowen [5] in 1912 has been frequently confused with superficial epitheliomatosis. Montgomery has pointed out that Bowen's disease is in reality a squamous cell epithelioma in situ.

The cause of the disease is unknown. The cases described by Tauber and Goldman,[6] Hopkins and Van Studdiford,[7] Ayres [8] and Anderson [9] suggest arsenic as a possible cause. Trauma and light have not been convincingly incriminated as causative agents.

Clinically, the lesions first appear on the trunk as erythematous, smooth, flat, irregular, shiny macules and papules which gradually increase in size and coalesce to form plaques 2 or 3 cm. in diameter or larger. The eruption when completely developed appears as multiple reddish to violet discoid patches which vary from the size of a pinhead to 15 to 20 cm. in diameter. Many of the patches are smooth and not infiltrated. However, a slight amount of scaling, oozing and crusting may be a prominent feature. The lesions

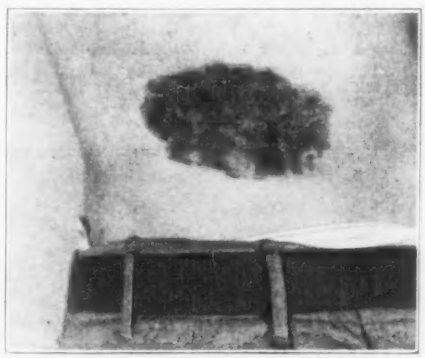

Fig. 1.—Superficial epitheliomatosis showing crusting with involution and atrophy of the central part of the lesion.

are characteristically surrounded by a fine thread-like waxy-looking slightly elevated border. As the lesion progresses peripherally eruptions of long duration exhibit central involution consisting of white, atrophic areas with some telangiectatic vessels.

The histologic appearance has been well described by Montgomery [2] and Wise.[4] The lesions

1. Little, G.: Erythematoid Benign Epithelioma, Brit. J. Dermat. **30**:435, 1923.

2. Wise, F.: Multiple Superficial Benign Epithelioma of the Skin: Its Differentiation from Kindred and Similar Eruptions, Arch. Dermat. & Syph. **19**:1 (Jan.) 1929.

3. Savatard, L.: Psoriasiform Carcinoma of the Skin, Brit. J. Dermat. **47**:51, 1935.

4. Montgomery, H.: Superficial Epitheliomatosis, Arch. Dermat. & Syph. **20**:339 (Sept.) 1929.

5. Bowen, J. T.: A Study of Two Cases of Chronic Atypical Epithelial Proliferation, J. Cutan. Dis. **30**:241, 1912.

6. Tauber, E. B., and Goldman, L.: Multiple Benign Superficial Epithelioma, Brit. J. Dermat. **47**:21, 1939.

7. Hopkins, R., and Van Studdiford, M. T.: Multiple Epitheliomas and Pigmentary Dermatosis in a Negro Boy, Arch. Dermat. & Syph. **29**:408 (March) 1934.

8. Ayres, S., Jr.: Multiple Benign Superficial Epitheliomas (Probably Arsenical); Psoriasis; Arsenical Keratoses, Arch. Dermat. & Syph. **47**:135 (Jan.) 1943.

9. Anderson, N. P.: Multiple Benign Superficial Epitheliomatosis, Arch. Dermat. & Syph. **47**:136 (Jan.) 1943.

resemble basal, basosquamous or squamous cell tumors showing multiple points of origin from the basal cells of the epidermis. They are superficial and rarely extend to the level of the sweat glands. In many cases, the tumor extends into the cutis as solid masses or as a netlike arrangement of cells. In others, the basal layer is intact and the growth is entirely intraepidermal. A lymphocytic and plasma cell infiltrate invests the masses of tumor cells and the upper zones of the cutis.

Fig. 2.—The tumor is chiefly intraepidermal and is sharply demarcated from adjacent areas of normal epidermis. There is a heavy lymphocytic and plasma cell infiltrate in the cutis at the right (× 40). (United States Army Medical Museum negative 77,241.)

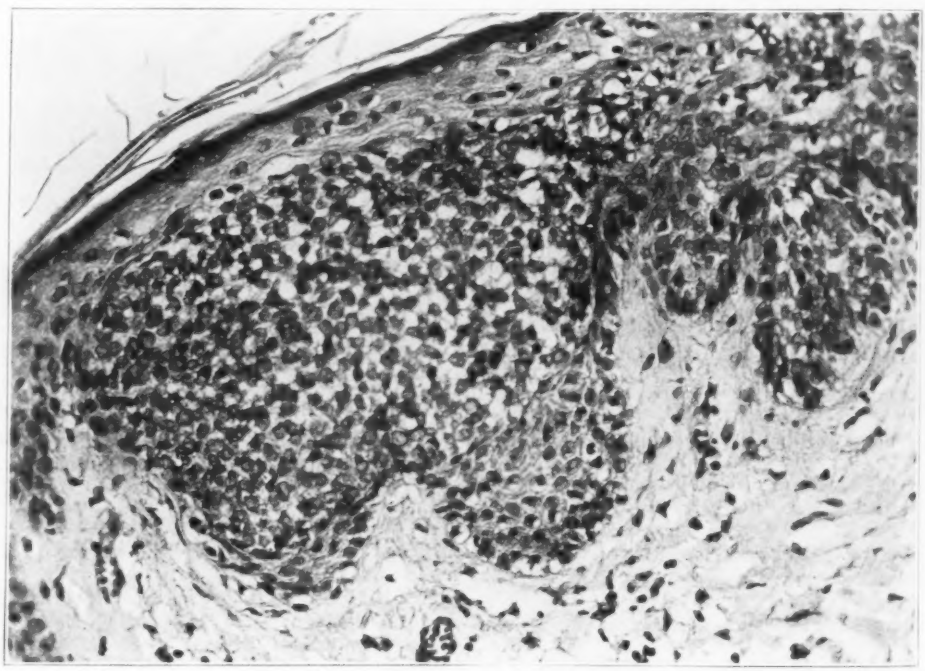

Fig. 3.—A higher magnification (× 280) showing the basal cell character of the tumor and absence of invasion of the cutis. (United States Army Medical Museum negative 77,240.)

REPORT OF CASE

A white man aged 33 entered the hospital on Aug. 14, 1943. In 1931 he first noticed a group of small red

"spots" and papules on his right flank. He consulted several physicians, who treated him symptomatically. The lesion gradually increased in size, but it was asymptomatic. Later he received treatments with a sun lamp, which he thought helped him slightly. The rash persisted, and the patient began using patent medicines, which caused the eruption to ooze and crust.

During the course of years many attempts to isolate a fungus from the lesion were unsuccessful. He received two roentgen ray treatments, which he believes aggravated the eruption. The rash would ooze and become crusted and adhere to his underclothing. About one year before entering the hospital he noticed a slight red spot on his right shoulder, which had persisted without any change.

Except for childhood diseases the patient had had no significant infections. He said he had not ingested arsenic in any form. The results of a general physical examination were essentially normal, as were those of routine urinary and hematologic studies. Examination revealed an erythematous to bright red lesion on the right flank. The skin in the central part appeared to be undergoing spontaneous involution with some atrophy. The lesion was 12 by 0.4 cm. and completely surrounded by a white to brown slightly elevated and threadlike border with a slight amount of telangiectasia. At the upper angle of the lesion there was a dime-sized ulceration covered with adherent crusts. Above the right clavicle there was an erythematous macular lesion measuring 0.5 to 0.75 cm.

A specimen for biopsy was taken from the border of the lesion on the right flank. The epidermis revealed small foci of basal cell proliferation alternating abruptly with zones of normal epidermis. The cellular proliferation in some places was entirely intraepidermal; in other places there were growths of the proliferating basal cells downward into the cutis. The cutis was diffusely infiltrated with chronic inflammatory cells.

COMMENT

This case illustrates the difficulty experienced in arriving at a diagnosis of superficial epitheliomatosis. The clinical features were typical of the disease; nevertheless, many years elapsed before it was recognized. Although the true nature of the lesion should be suspected clinically, a biopsy is essential for positive diagnosis.

LICHEN SCLEROSUS ET ATROPHICUS

REPORT OF ITS OCCURRENCE IN A NEGRO

S. IRGANG, M.D.
NEW YORK

Lichen sclerosus et atrophicus is observed rarely in white patients, but its occurrence in Negroes is still more infrequent. A search of the literature failed to disclose a single report dealing with this disease in a Negro. During an experience of twenty-four years at a clinic devoted almost exclusively to the treatment of Negro patients, just 1 case of lichen sclerosus et atrophicus has been encountered. This case was considered of sufficient interest to record.

REPORT OF A CASE

An obese full-blooded American Negress, aged 51, mother of ten healthy offspring, sought relief for a pruritic eruption which had been present for one year. She also complained of lassitude and exertional dyspnea. The menopause had developed at the age of 49.

Fig. 1.—Lichen sclerosus et atrophicus of one year's duration. The lesions on the abdomen healed spontaneously.

The dermatitis was generalized, symmetric and moderately pruritic and was noted principally on the chest, shoulders, abdomen and upper extremities; the scalp, face and oral cavity remained free. The eruption consisted of round, flat, firm, well defined, glistening hyperpigmented and achromatic papules which varied in size from that of a pinhead to that of a split pea. Inflammatory and pigmentary areolas were lacking. The lesions were mainly discrete, but there was a tendency toward grouping and in several instances they coalesced to form small irregular sharply marginated patches. Minute papules developing in scratch marks resulted in threadlike linear formations. The achromatic lesions were relatively few, but they had a distinctive white color which stood out in sharp contrast to the normally pigmented background.

Active lesions were partially—and several were entirely—covered by dull, thick, rough, dark brown to brownish black adherent keratotic mantles. These lesions contained varying numbers of brownish black follicular plugs which on removal left gaping orifices. The follicular occlusions were striking and were noted readily on casual inspection.

Fig. 2.—The deeply pigmented linear lesion on the arm is obvious. Note the tendency for papules to develop in scratch marks.

On the flexor aspect of both forearms the eruption was in process of resolution. The papules were deeply pigmented, flat, smooth, firm and glistening, and several showed central involution, forming annules not unlike those of lichen planus.

The primary lesions were achromatic, but later the vast majority became hyperpigmented. In a few the achromatic tendencies persisted indefinitely, even to the residual atrophic skin. In most instances deeply pigmented atrophic sequelae were noted after complete resolution. However, pigment formation in these atrophic areas lessened gradually until finally they became

From the Department of Dermatology and Syphilology, Harlem Hospital, Dr. Oswald La Rotonda, Medical Director.

flesh colored. Keloids did not develop in the healed areas.

The hair on both temporal and frontal regions of the scalp was sparse. All the teeth were carious, and pyorrhea was present. The tonsils were enlarged and diseased. The systolic blood pressure was 202 and the diastolic 132. The urine had a specific gravity of 1.010, and the sediment showed an occasional hyaline cast. A hemogram was normal except for a mild lymphocytosis (42 per cent). A Kahn reaction of the blood was negative, and an intracutaneous injection of 0.1 cc. of old tuberculin in a dilution of 1 : 100,000 elicited a mild local reaction.

Histologic Observations.—Active Lesion (from the Left Shoulder): Except for the stratum corneum the epidermis was obviously atrophic. Almost all of the rete pegs were lost, and a rare one which remained was

Fig. 3.—Low power view of a section showing a diffuse hyperkeratotic process extending into and occluding the dilated follicular orifices. The rest of the epidermis is atrophic. Note the intense edema in the upper part of the cutis. Hematoxylin and eosin.

blunted. The stratum corneum was decidedly thickened and consisted of closely packed layers of cells. This hyperkeratotic process extended into and occluded entirely the distended hair follicles and their enlarged orifices; the horn cells were heaped up at the follicular orifices. A single sweat pore orifice showed similar involvement. The stratum granulosum consisted of a single layer of cells, a few of which were edematous. The narrowed prickle cell layer showed mild interstitial edema; many of its cells were edematous, and a few showed evidences of vacuolar degeneration. The basal cells were affected similarly. Pigment formation was diminished greatly in practically the entire section, although in a restricted area at one margin it appeared normal and even slightly increased.

The tissues of the upper third of the cutis were highly edematous, with resulting distortion of the light-staining collagenous fibers. Moderate numbers of fibroblasts were scattered throughout this intensely edematous area. The blood vessels of the entire cutis were dilated, but those in the subpapillary layers were expanded to a greater degree; in the latter locality a few were congested, and a single vessel was partially thrombosed. Small, well defined, compact perivascular cellular infiltrates were observed in the deeper regions of the highly edematous areas and throughout the lower half of the cutis; they were lacking entirely in the upper fourth of this layer. The infiltration consisted of small lymphocytes, a few plasma cells and an occasional mast cell. A section of a partially disorganized sebaceous gland lobule was present in the subpapillary portion; none were seen elsewhere. The majority of coil glands appeared normal; several were moderately distended, and their cells were edematous. Small deposits of melanin were dispersed through the superficial layers of the cutis. Elastic tissue could not be seen in the highly edematous regions.

The subcutis showed minimal involvement. Several widely scattered minute perivascular infiltrates similar to those in the cutis were present in the upper half of this layer. A few small perivascular foci of newly formed connective tissue were also noted here.

Healed Lesion (from the Left Shoulder): A section from an atrophic hyperpigmented lesion showed slight hypertrophy of the horny layer. The rete pegs showed evidences of repair; several appeared normal, but the vast majority were blunted. The prickle cell layer was of practically normal thickness, and at one edge of the specimen mild acanthosis was present. Except for those of the stratum corneum, the epidermal cells were mildly edematous, and this was evident particularly in the

superficial prickle cells. The cells of the basal layer still showed evidences of edema and even vacuolar degeneration. Epidermal pigmentation was decidedly increased.

The serous extravasations in the upper third of the cutis were almost entirely absorbed, but the superficial blood vessels were still moderately dilated. The perivascular cellular infiltrates had disappeared completely from both the cutis and the subcutis. Follicular and sebaceous gland structures were also missing. The collagenous fibers of the papillae were coarse and compact, and those in the subpapillary layers were still distorted. Mild hyperplasia of the connective tissues was present in both cutis and subcutis, but there were no indications of sclerosis. In those areas where the preexisting edema was most intense, the elastic tissue fibers were broken up into minute segments but there was no evidence of degeneration.

COMMENT

When the patient was first seen, the majority of the lesions had healed, and a relapse did not occur during an observation period of one year. It is doubtful whether treatment, which consisted of injections of bismuth subsalicylate in oil and liver extract, had any direct effect on the eruption, since the latter showed resolving tendencies when the patient was first admitted to the clinic.

The striking white color of the newly formed lesion resulted both from a great reduction in epidermal pigmentation and from the intense edema of the superficial tissues of the cutis. The conspicuous fibroblastic reaction and the terminal mild collagenous hyperplasia were unusual findings and contrary to those of Montgomery and Hill.[1] Inasmuch as these investigators studied sections from white patients, the connective tissue reactions noted in my case might not be entirely unexpected in view of the ability of the Negro skin to react in such fashion to even slight injury.

SUMMARY

Lichen sclerosus et atrophicus is extremely rare in full-blooded Negroes.

A case of lichen sclerosus et atrophicus occurring in a full-blooded Negress presented an opportunity to make clinical and histologic observations. At the outset the lesions had a peculiar white color, but later the majority became hyperpigmented. An appreciable fibroblastic reaction was noted throughout the skin, but it was most significant in the edematous areas. Mild collagenous hyperplasia followed the disappearance of the exudated stage.

160 Riverside Drive.

1. Montgomery, H., and Hill, W. R.: Lichen Sclerosus et Atrophicus, Arch. Dermat. & Syph. 42:735 (Nov.) 1940.

Clinical Notes

CONTACT DERMATITIS PRODUCED BY TINCTURE OF MERTHIOLATE

LESTER HOLLANDER, M.D., PITTSBURGH

Miss A. K. F., a 56 year old white American, a graduate and practicing nurse, was examined on Jan. 7, 1944, on account of a persistent dermatitis which affected the flexor surfaces of all the fingers and both thumbs. This had persisted in spite of treatment for over two years and, on account of the particular areas involved, had greatly handicapped the patient in the pursuit of her occupation.

The inflammation had caused some thickening and cracking of the skin of the tips of her fingers and thumbs. At several points the fissures extended through the entire thickness of the skin and thus rendered the phalanges painful and tender. The process was sharply limited to the cutaneous surface of the distal phalanges only.

Topical applications of an ointment, low voltage roentgen ray treatments, ultraviolet irradiations, injections of vitamins and/or foreign protein, use of sulfonamide compounds and a wide variety of diets were ineffectual. The dermatitis persisted, the fissures healing and opening without any particular or explainable reason. The pattern of the eruption, its persistent localization and the curiously deep fissured appearance all suggested a simple and explainable cause.

A scrutinizingly careful medical history furnished the necessary information. The dermatitis had been precipitated by a trauma which occurred a few weeks before its onset. While alighting from a street car the patient slipped and fell and "brush-burned" her finger tips. As she was on her way to the hospital, she stopped in the emergency room for first aid treatment. Although her abrasions were not limited to her finger tips, the others were considered minor and were left unattended. The lesions on her fingers were painted with tincture of merthiolate. She was instructed to continue with such painting morning and night. A few weeks later the tips of her fingers and thumbs became sore and inflamed. She sought medical care, and the previously mentioned varieties of therapy were instituted in turn as each failed as a remedy. During this entire time (over two years), however, the patient continued the "first aid" application of tincture of merthiolate as an adjuvant to all other medication, a circumstance either unknown or not inquired for or perhaps unrecognized by her medical advisers.

A patch test with tincture of merthiolate elicited a positive exudate reaction. After its use was stopped and petrolatum gauze was applied, the chemical dermatitis slowly improved and the color of the skin over the finger tips returned to normal, although the epidermal layer has remained thin and easily irritated by the slightest trauma, such as friction.

It is my belief that it will take some time before the damage inflicted twice daily during a two year period will completely disappear.

From the Pittsburgh Skin and Cancer Foundation.

Correspondence

COAL TAR IN DERMATOLOGIC PREPARATIONS

To the Editor:—This letter should serve as a constructive supplement to the report of Downing and his collaborators in the June 1944 issue of the ARCHIVES (page 357). The report alleges that dermatologists prefer a jet black color to their crude coal tar salve as against the greenish shade some products possess and relates clinical experience with both types of salve as revealing similar therapeutic efficacy.

There are two groups of substances in crude coal tar. Both are black; but one is stable, and the other readily turns a chocolate brown on contact with water and air (oxygen). Mixtures of black and brown give greenish shades, an olive drab color. May I suggest a simple experiment for those of my colleagues who seek experimental proof of this fact:

Add thoroughly mixed crude coal tar, to the extent of 20 per cent, to an anhydrous hydrophilic base—let us say, to an oxycholesterol-petrolatum base. The finished product is jet black. To a portion of this black mixture add water and rub it in. The mixture gradually assumes an olive drab color.

Some years ago I succeeded in separating these two crude coal tar fractions. I then thoroughly satisfied myself that the stable black fraction is useless and contains the gritty portion of the tar. The unstable fraction is the therapeutically active one. It follows that rather than seek for a crude coal tar salve that is jet black or object to one that is greenish (containing the brown fraction) dermatologists should welcome one that is more or less free of the stable black fraction; that is to say, they should welcome a chocolate brown product rather than a jet black one.

HERMAN SHARLIT, M.D., New York.

32 East Sixty-Fourth Street.

News and Comment

DEATHS

Dr. Edward C. Gager died at his home in St. Paul on July 29, 1944, at the age of 62. Dr. Gager had been an instructor in dermatology in the University of Minnesota Medical School.

Dr. Jerome Kingsbury died in New York on July 15.

Dr. Andrew P. Biddle died in Detroit on August 2.

Dr. Laird S. Van Dyck died in New York on Aug. 9, 1944.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

SYNDROME OF CUTANEOUS FRAGILITY AND HYPERELASTICITY AND ARTICULAR HYPERLAXITY. BEN BENJAMIN and HYMAN WEINER, Am. J. Dis. Child. **65**:247 (Feb.) 1943.

The Ehlers-Danlos syndrome, well known to dermatologists, consists of laxity and hemorrhagic tendency of the skin, laxity of joints and peculiar circumscribed changes of the skin. The authors present 1 case of the typical syndrome and a second case in which the patient exhibited extreme fragility of the skin without unusual cutaneous elasticity or articular laxity. The second case indicates that there are instances of the incomplete syndrome.

ERYSIPELAS IN INFANCY. JAMES W. BRUCE and THOMAS S. CHALKLEY, Am. J. Dis. Child **65**:739 (May) 1943.

In a short but interesting review the authors compare results of treatment in two groups of infants with erysipelas. The first group consisted of infants who were treated prior to the introduction of sulfanilamide into therapy, and the second, a more recent group of infants who were treated with sulfanilamide.

It is interesting to note that the introduction of sulfanilamide has effected early and decided improvement and a reduction in number of days in the hospital. Yet such therapy has not materially lowered the mortality rates for infants below 1 month of age, nor has it greatly decreased the complications.

HEMANGIOMA OF THE ELBOW SUCCESSFULLY TREATED WITH RADIUM AT AN EARLY AGE. IRA I. KAPLAN, Am. J. Dis. Child. **65**:785 (May) 1943.

Kaplan's primary purpose in presenting this short case report was to show that radium therapy properly given need not adversely affect the growing bones in children.

NELSON PAUL ANDERSON, Los Angeles.

ALLERGIC DERMATOSES DUE TO FOOD HYPERSENSITIVITY; REPORT OF A DELAYED SKIN REACTION FOLLOWING INTRACUTANEOUS INOCULATION OF AUTOSERUM. R. MURRAY WINGARD, Arch. Pediat. **60**:139 (March) 1943.

This is a report of a series of investigations made by the author on 9 hospitalized allergic subjects in an attempt to recover sensitizing agents in the blood of the patients with atopic dermatoses due to food hypersensitivity.

The experiment was instigated by the accidental finding of a local erythematous reaction at the site of inoculation on a patient with acute urticaria who was being treated empirically by intracutaneous inoculations of his own serum. The reaction developed in six to twelve hours and resembled the lesions of his original dermatosis. It was felt that this delayed reaction was due to the presence of allergens in the autoserum.

For each subject tested the etiologic role of the ingesta was confirmed by noting the response to elimination diets and the effect of renewed exposure. Clinical lesions appeared in 6 of the 9 patients within twenty-four hours after ingestion of known allergens.

In preparation of the serums each patient was given a morning meal made up of offending food or combination of foods and under strict asepsis 5 to 10 cc. of blood was withdrawn at regular intervals of one-half, one, two, three and twelve hours. This procedure was repeated on the following day, and the specimens from the patient were pooled and refrigerated. The serum was decanted in twenty-four to forty-eight hours and tested for sterility. Solution of merthiolate (1 : 50,000) was used as a preservative. It was felt that by the collecting of samples of blood at regular intervals during this period at least part of the antigen might be recovered.

Each patient had been given an elimination diet, and the lesions had either cleared or remained stationary before he was tested with 0.1 cc. of his own serum and 0.1 cc. of 1 : 50,000 solution of merthiolate used as a control.

In order to rule out the possibility of a nonspecific factor, such as a toxin, 20 nonallergic subjects were tested with allergic autoserums and none of them had a delayed reaction. In each of the allergic patients tested, the delayed reaction resembled the basic dermatologic lesion, which suggests that the cutaneous reaction was caused by the same substance that caused the clinical lesion.

GELBER, Los Angeles.

THE EXPERIMENTAL DEMONSTRATION THAT PERIARTERITIS NODOSA IS A MANIFESTATION OF HYPERSENSITIVITY. ARNOLD R. RICH and JOHN E. GREGORY, Bull. Johns Hopkins Hosp. **72**:65 (Feb.) 1943.

The authors were able to produce typical diffuse periarteritis nodosa in rabbits by establishing a condition analogous to serum sickness in man. They have thus demonstrated that periarteritis nodosa is one manifestation of the anaphylactic type of hypersensitivity.

Previous clinical and pathologic evidence has suggested that in addition to foreign serum and sulfonamide compounds other widely different types of sensitizing antigens are capable of causing periarteritis nodosa in man. Such facts suggest the attempt to determine and eliminate the responsible antigen in each case of a disease diagnosed clinically as periarteritis nodosa.

SKIN SENSITIVITY TO MYCOBACTERIAL TUBERCULOSIS IN SARCOIDOSIS. W. S. BROOKE and R. DAY, Bull. Johns Hopkins Hosp. **72**:101 (Feb.) 1943.

Seven patients with sarcoidosis were tested with eighteen tuberculins prepared from different members of the mycobacterial family. Tuberculins giving a positive reaction were used to study 5 normal controls. Three of the 7 patients with sarcoid disease and 2 of 5 controls showed positive reactions to old tuberculin prepared from human bacilli and to a few other mycobacterial tuberculins.

Such tests present evidence against the view that the cause of sarcoidosis is related to any member of the mycobacterial germs used in this series.

NELSON PAUL ANDERSON, Los Angeles

SULFATHIAZOLE IN ECZEMATOUS PYODERMA: SENSITIZATION REACTION TO SUCCESSIVE LOCAL AND ORAL THERAPY: REPORT OF TWELVE CASES. CLARENCE S. LIVINGOOD and DONALD M. PILLSBURY, J. A. M. A. **121**:406 (Feb. 6) 1943.

The authors report 12 cases of sensitization to sulfathiazole in patients who had had a localized eczema with a secondary pyogenic element. The reaction is probably produced by rather prolonged application of the sulfathiazole ointment (more than five days) and becomes manifest when sulfathiazole is given by mouth. The symptoms occur after administration of a small amount of sulfathiazole and within a period of a few hours.

The course of events was similar in all cases: (*a*) prompt development of constitutional symptoms, including malaise, chilliness and elevation of temperature, (*b*) local exacerbation of the lesions under treatment and (*c*) a generalized hematogenous "id"-like eruption, which was always pruritic and explosive in its onset. The symptoms recur when sulfathiazole is taken by mouth a second or third time.

On the basis of an experience with more than 1,000 patients for whom local sulfathiazole therapy to the skin has been used, it is considered that (1) such therapy should not be employed for more than five days, (2) the indications for such therapy should be carefully considered and (3) local sulfathiazole therapy is highly effective in treatment of frank superficial pyodermas but is decidedly less effective against chronic eczematous processes.

HYPERSENSITIVITY PRODUCED BY THE TOPICAL APPLICATION OF SULFATHIAZOLE. M. H. COHEN, H. B. THOMAS and A. C. KALISCH, J. A. M. A. **121**:408 (Feb. 6) 1943.

The authors report 2 cases of varicose eczema treated locally with 5 per cent sulfathiazole ointment in which was produced a generalized eruption that was reproduced by the administration of small doses of sulfathiazole by mouth.

They believe that the topical application of sulfathiazole can arouse a hypersensitivity resembling an allergic phenomenon and that this hypersensitivity can be affected by continuation of the use of the drug either locally or by ingestion.

The older methods of treatment of varicose eczema and varicose ulcer should always be tried before sulfathiazole therapy is instituted.

CUTANEOUS HYPERSENSITIVITY TO TOPICAL APPLICATION OF SULFATHIAZOLE. ALFRED L. WEINER, J. A. M. A. **121**:411 (Feb. 6) 1943.

Weiner reports 4 cases of cutaneous hypersensitivity to sulfathiazole and sodium sulfathiazole, established in each instance by means of a patch test. In each case the dermatitis occurred as a characteristic contact dermatitis which disappeared when use of the sulfathiazole preparations was discontinued. It is Weiner's opinion that the incidence of cutaneous hypersensitivity to the drug is low.

CUTANEOUS MELANOMAS: A CLINICAL STUDY OF SIXTY CASES. J. R. DRIVER and DONALD N. MACVICAR, J. A. M. A. **121**:413 (Feb. 6) 1943.

Of a series of 60 patients with melanomas, 25 presented themselves for treatment comparatively late, with relatively advanced malignant growths. Only 2 of them are known to be alive more than five years later. Of the other group of 35 patients seen in dermatologic practice, 17 survived from seven to eighteen years. These patients were seen early in their disease and the great majority were free of metastatic dissemination when they were first treated.

The authors recommend early diagnosis and thorough destruction of the primary lesion either by electrocauterization or by radical excision with the scalpel.

If the lymph nodes are clinically involved, the chance of cure are practically nil. Melanomas on the fingers, hands, arms, feet and legs should be treated by amputation followed by surgical dissection of the regional lymph nodes in every case.

The complete scalpel excision or thorough destruction of flat nonhairy pigmented nevi (junction type nevi) from areas subject to chronic irritation is the best form of prophylaxis for cutaneous melanomas.

MAPHARSEN IN THE TREATMENT OF CONGENITAL SYPHILIS. GIRSCH D. ASTRACHAN and VAN ALSTYNE CORNELL, J. A. M. A. **121**:746 (March 6) 1943.

Astrachan and Cornell consider mapharsen a good drug for use in treatment of late congenital syphilis and of interstitial keratitis. Dr. John E. Rauschkolb in his discussion of this paper disagrees with the authors as to the usefulness of mapharsen in treatment of interstitial keratitis.

Astrachan and Cornell believe that 0.75 mg. per kilogram of weight should be the maximum dose for patients with any form of congenital syphilis. It is less toxic for children than for adults and can be given intramuscularly to selected patients if all attempts at intravenous therapy have failed.

In 7 of 10 cases of early congenital syphilis, the patient's serologic reaction was reversed partly or completely after an average of seventeen and three-tenths injections of mapharsen were administered.

LESIONS OF THE ESOPHAGUS IN GENERALIZED PROGRESSIVE SCLERODERMA. JOHN R. LINDSAY, F. E. TEMPLETON and STEPHEN ROTHMAN, J. A. M. A. **123**: 745 (Nov. 20) 1943.

Five patients with clinically and histologically typical generalized progressive scleroderma presented evidence of a disturbance of the swallowing mechanism, varying apparently only in the stage of the esophageal lesion. There was roentgenologic evidence of disturbed function of the esophagus in all 5 with a varying degree of stenosis in 3.

The esophageal disturbances were characterized by loss of peristalsis in the lower two thirds of the esophagus, difficulty, especially when in the lying position, in swallowing solids or liquids, burning pain behind the sternum about an hour after meals, chronic ulceration in the lower third of the esophagus and stricture formation in the later stages, limited to the region immediately above the phrenic ampulla of the esophagus.

Biopsies of esophageal specimens revealed changes in the connective tissue of the submucosa which suggested sclerodermatic change.

On the basis of the observations in these 5 consecutive cases, the authors believe that disturbance of esophageal function is characteristic of generalized progressive scleroderma.

CUTANEOUS REACTIONS DUE TO THE BODY LOUSE (PEDICULUS HUMANUS). SAMUEL M. PECK, WILLARD H. WRIGHT and JAMES QUINCY GANT JR., J. A. M. A. **123**:821 (Nov. 27) 1943.

There are apparently two components to the "louse bite reaction": the purpuric element due to the act of

feeding, and an inflammatory reaction following sensitization.

Repeated exposures to the body louse will result in the development of a dermal hypersensitivity to it and its feces in the majority of persons exposed.

A Treatment for Pediculosis Capitis. William A. Davis, J. A. M. A. **123**:825 (Nov. 27) 1943.

A lotion containing 40 per cent of the monophenyl ether of ethylene glycol, 30 per cent of ethyl alcohol, 25 per cent of water and 5 per cent of methyl salicylate has proved to be satisfactory for the treatment of pediculosis capitis. This preparation rapidly kills lice and nits; it costs little, and it is not irritating.

Grain Itch. George K. Rogers, J. A. M. A. **123**:887 (Dec. 4) 1943.

Grain itch is produced by a mite known as Pediculoides ventricosus. It lives as an ectoparasite on various insects. Probably the most common of these is the grain moth.

It is thought that in the process of abstracting liquid from the skin the mite synchronously injects an irritating substance which gives rise to an urticarial type of lesion.

Pediculoides cannot thrive on human blood. Hence it remains attached to the human skin for only a short time, and therefore treatment with the view of destroying the mite is useless.

An epidemic occurred in Phoenix, Ariz., among men handling bales of hay. The individual lesions were discrete and papular, with many showing the characteristic wheal formation of urticaria. They differed from urticaria, however, in that those which were not excoriated were surmounted by a tiny central vesicle varying from the size of a pinpoint to that of a pinhead.

Five of the men on their own initiative sprayed themselves with a commercial fly spray and claimed immunity from the bites of the mite. This product consists of a pyrethrum extract (from which the irritating properties have been removed) and an odorless, highly refined kerosene. Since kerosene is irritating to the skin, this method is not to be recommended.

Henschel, Denver.

Syringadenitis Suppurativa Tropicalis (A Complication of Lichen Tropicus): Histologic Appearance and Etiologic Considerations Particularly as to a Possible Relationship of Ascorbic Acid and Carbohydrate Metabolism. Frederick Reiss, J. Lab. & Clin. Med. **28**:1082 (June) 1943.

The author describes a case of syringadenitis suppurativa tropicalis, a name which he gives to a complication of lichen tropicus (prickly heat). Few persons living in the tropics escape being affected by prickly heat. There has been no acceptable explanation, as yet, offered regarding the cause of lichen tropicus, although many explanations have been advanced as to the cause of the inflammatory involvement and infection of the sweat glands.

The author advances the evidence that this complication is furthered by excessive loss of vitamin C and altered metabolism. He substantiates his evidence with the following facts: In the 20 cases studied all the patients were women; in 16 of these the face alone was involved. These women worked outdoors, as gardeners or farmers, in a temperature around 90 F. Their diet consisted of polished rice and vegetables. The profuse sweating produced a depletion of vitamin C, which made the skin susceptible to infection.

The author includes a morphologic and microscopic description of this disease. The treatment consists of appropriate topical applications and use of ascorbic acid (vitamin C) internally.

Gelber, Los Angeles.

Some Details in the Therapy of Syphilis. L. N. Mashkilleyson, Sovet. med. (no. 11) **5**:8, 1941.

In an extensive article on the therapy of syphilis the author emphasizes the importance of the sometimes "forgotten friend" of a syphilologist, the salts of iodine. Iodine therapy is brought to mind only when arsenic and bismuth preparations fail, as in cases of visceral syphilis and neurosyphilis.

Just as bismuth unjustly has practically pushed out mercury from the therapeutic armamentarium of the syphilologist, even more nearly complete has been the elimination of iodine. Such a slip of memory is sometimes harmful to the patient. Often the patient himself neglects to take iodine salts when prescribed because he thinks that "injections and shots" are the real treatment. In such negligence the fault lies mainly with the physician and not with the patient.

The author recommends use of iodine for all persons with late syphilis and for patients over 40 with syphilis in any stage. He considers iodine therapy to be the best prophylactic measure against visceral syphilis and neurosyphilis, especially for patients of the older age group.

He also recommends that after the patient completes his antisyphilitic treatment he continue to take solution of potassium iodine for four months the first year and for two months a year for two consecutive years thereafter.

Therapy of Roentgen Dermatitis. E. I. Dzhigit, Sovet. med. (no. 11) **5**:26, 1941.

The author reports a case of roentgen dermatitis of both heels of three years' duration which did not respond to any kind of therapy and which cleared with treatment with radioactive mud. On account of the intense pain in the heels, the patient could not walk without crutches and frequently had to be given opiates. There was, however, a complete thermanesthesia.

After two local mud baths in a mud resort of the Crimea the crusts fell off and the skin of the heels showed islands of clean epidermis, and after four baths the patient was free of pain and could walk without crutches.

Altogether the patient received fourteen mud baths combined with heliotherapy. The skin cleared completely; the hyperesthenia disappeared, and the patient regained sensitivity to heat.

Treatment of Pediculosis Pubis with Pyrethrum. M. Voitenko, Sovet. med. (nos. 5-6) **6**:35, 1942.

Because of the difficulties in the preparation of ointments and lotions on the battlefield and because of the sensitivity of some soldiers to mercurial preparations, the author tried the use of pyrethrum powder for the treatment of pediculosis pubis.

The technic of the treatment is simple: About 2 or 3 Gm. of the powder is dusted on the pubic region, the axillas or other places where pediculi are seen. The patient rubs the powder in for three to five minutes, and some of the powder is dusted on the underwear. After five days the patient returns for a check-up.

Eighty per cent of the patients were cured by the first application, and 100 per cent of them were cured by two treatments. There was not a single case of cutaneous irritation from the pyrethrum.

Gradow, San Francisco.

Society Transactions

EDITED BY DR. HERBERT RATTNER

BALTIMORE-WASHINGTON DERMATOLOGICAL SOCIETY

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REUBEN GOLDMAN, M.D., *Secretary*

JUNE C. SHAFER, M.D., *Reporter*

University of Virginia Hospital, Charlottesville, Va.
May 29, 1943

The following cases were reported by the staff of the department of dermatology and syphilology of the University of Virginia Hospital, Dr. Dudley C. Smith, Dr. June C. Shafer, Dr. Phyllis E. Jones, Dr. A. J. Crutchfield and Dr. Page Booker.

After a discussion of the cases, Dr. Alfred Chanutin, professor of biochemistry, discussed "Lipid Metabolism in Relation to Cutaneous Disorders."

Lichen Planus Erythematosus.

Miss V. R., a white nurse aged 37, was first seen in August 1940 with a pruritic, erythematous maculopapular eruption on her face, neck, trunk and perineum. The lesions had been present for fourteen months and were aggravated by ultraviolet irradiation. A tentative diagnosis of lichen planus was made and intramuscular injections of bismuth sodium tartrate were prescribed. Histologic examination revealed a loosely lamellated hyperkeratosis of the epidermis with an intact granular layer, which in some areas was increased in thickness. There was some disorganization of the basal cells, with edema of the lower rete layer and the papillary portion of the corium, which obliterated the line of demarcation in several areas. The upper part of the corium had a rarefied appearance, with a moderate infiltrate of small round cells perivascularly and about the margins of the hair follicles and sweat glands. It was felt that the changes were consistent with early atypical lupus erythematosus.

In September 1940 the patient was examined in Baltimore by Dr. Maurice Sullivan, who stated: "In differential diagnosis I considered the possibility of lichen planus erythematosus (Crocker)."

The patient was seen here again on May 11, 1943, her course having continued essentially unchanged. She stated that bismuth had given no relief and its use had been interrupted because of stomatitis and diarrhea; roentgen ray therapy and various local applications had been used, without benefit. Although the lesions on her buttocks had cleared, there had been little variation in the other lesions and she complained of severe pruritus. At times a slight afternoon fever was present, but there had been a gain in weight of 10 pounds (4.5 Kg.) and her general health was good.

Physical examination revealed on the face thinly scattered red, shiny papules, which fused at the hair margin to present a diffuse erythematous appearance; a few lesions appeared on the scalp. Similar papules were thickly distributed over the neck, between the breasts and over the shoulders, with scattered lesions on the lower part of the back, the abdomen and the fingers. The remainder of the physical examination revealed no pertinent abnormalities.

The urine was normal. A blood count showed the hemoglobin content to be 12 Gm. (Haden); erythrocytes 3,560,000; leukocytes 4,600, with a differential distribution of 2 per cent band forms, 54 per cent segmented polymorphonuclear leukocytes, 35 per cent small lymphocytes, 5 per cent transitional monocytes and 4 per cent eosinophils, and platelets 214,000. Other laboratory studies gave results within normal limits.

The conditions on presentation are essentially those described on May 11, 1943.

DISCUSSION

DR. MAURICE SULLIVAN: In 1940 it was my impression that this patient had lupus erythematosus, but I could not decide definitely, since some of the lesions looked like lichen planus. Crocker described a disease between these two, which is like lupus erythematosus but in which the appearance of the papular lesions is like lichen planus. The patient was sensitive to ultraviolet irradiation by test.

DR. F. A. ELLIS: Crocker's disease is primarily lupus erythematosus. One patient that I saw responded well to a bismuth preparation. There is atrophy which tends to disseminate but not much infiltration. Why has she not lost her hair? The disease may not have become atrophic. Lichen planus can become atrophic like lichen sclerosus et atrophicus. Lichen planopilaris seldom occurs on the face. I have heard of only 3 cases. Lesions in the mouth are difficult to evaluate. I do not know if this is a true planus, although this diagnosis seems more suggestive than lupus erythematosus.

DR. THOMAS MURRELL: The photosensitization points toward lupus erythematosus.

Lichen Sclerosus et Atrophicus.

Mrs. H. J., a white housewife aged 53, was admitted to the hospital on May 14, 1943, stating that two years previously she had noticed an eruption in the lumbar region. There were no associated symptoms, but one year later similar lesions, consisting of flat-topped papules and plaques, appeared on the chest, below the left breast and on the left wrist. Six months later the lumbar involvement spread rapidly downward to involve the upper end of the anal furrow, and three weeks prior to her admission the plaque ulcerated, discharging a seropurulent material. Moderate tenderness accompanied the ulceration, but there were no other symptoms except mild pruritus in the described areas.

Physical examination disclosed a plaque 3 inches (7.5 cm.) in width extending in the midline from the level of the tenth thoracic vertebra to the first sacral vertebra. Centrally there appeared a ragged ulcer 2 cm. in diameter covered with exudate. The plaque was formed by flat-topped shiny white atrophic papules from 1 to 5 mm. in diameter and raised 1 mm. above the surrounding skin. A lesion 1 cm. in diameter was present on the flexural surface of the left wrist, and an area 4 by 6 cm. appeared under the left breast. Numerous diffusely scattered papules were located between the breasts and over the upper part of the

abdomen. The vulvar and perineal areas were covered with similar lesions. There were no other conditions observed which were pertinent to the chief complaint.

Results of laboratory studies, including determinations of calcium, phosphorus and phosphatase, were within normal limits. The cholesterol content of the blood was 241 mg. per hundred cubic centimeters; the basal metabolic rate was —4 per cent. Histologic study of a section from a lesion on the abdomen revealed atrophy of the epidermis, with keratotic plugging, loss of the rete ridges and necrosis of the basal cell layer. Edematous changes and homogenization of the connective tissue below the epidermis were present, with extravasation of the red blood cells in the area. A moderate infiltrate with some perivascular involvement appeared in the underlying corium.

DISCUSSION

DR. F. A. ELLIS: I think this is an interesting case. It is unusual to find hypertrophic lesions in this disease. Dr. Montgomery takes us to task for confusing this with the similar picture of kraurosis vulvae. The picture is well shown here with plugging and separation between the epidermis and cutis caused by an unknown substance. There is a rarefaction of the upper layers of the cutis. It looks as if it would bring serum, but it does not. What causes the rarefaction? It is thick here, which helped to account for the warty appearance. This is a dermal disease often confused with epidermal leukoplakia, which is an epidermal disease. One of my patients also had kraurosis with lesions on the vulva.

DR. I. R. PELS: I had a patient like this with white spot disease. Is this a clinical entity? There is a difference of opinion.

DR. J. W. ANDERSON: It is really lichen sclerosus et atrophicus. The name "white spot disease" should be eliminated.

DR. L. GINSBERG: The purplish halo around the lesions is significant for a diagnosis of lichen sclerosus et atrophicus. Is this a clinical entity? I think white spot disease and lichen sclerosus are different diseases. Each is a clinical entity.

DR. F. A. ELLIS: White spot disease is not a clinical entity. Histologically it is like scleroderma.

Linear Lichen Planus.

L. S. M., a white man aged 76, was first seen on April 23, 1943, when he gave the following history: For eighteen months he had noticed a linear itching dermatitis on the posterior aspect of his left leg. The pruritus continued to be mild, and there was no change in extent of the lesion until one or two months before his admission to the hospital. At that time, after a cholecystectomy, the dermatitis advanced up the calf and the medial aspect of the dorsal surface of the thigh, reaching the middle of the buttock. The pruritus had become somewhat more severe.

Examination disclosed a linear area 1 to 3 cm. in diameter extending from the left ankle posteriorly to the middle of the buttock. The lesions, which showed a tendency to plaque formation, consisted of bluish red papules with flat tops covered with shiny adherent scales. In the lumbar region were a few pigmented plaques which appeared to have healed. The remainder of the examination revealed no further abnormalities.

Results of histologic studies were reported as follows: "On section there is seen a layer of squamous epithelium which is decidedly atrophic, the rete pegs being entirely lost. Keratotic material is seen over the surface. Just beneath the epithelial layer there is a dense infiltration of inflammatory cells, which are predominantly lymphocytes."

A diagnosis of linear lichen planus was made, and treatment has consisted of intramuscular injections of crude liver extract. There has been little change in the appearance of the lesions since the patient's first admission to the hospital.

DISCUSSION

DR. F. A. ELLIS: The pathologic picture was that of atrophic lichen planus rather than of true lichen planus.

Erythroplasia of Queyrat; Molluscus Contagiosum.

H. W. B., a white salesman aged 42, was first seen in December 1942, because of thickening and induration of the prepuce, which had developed in November 1941. When this subsided, a rounded, raised, firm lesion remained, which on biopsy was diagnosed as erythroplasia. Since roentgen therapy had been administered elsewhere and had produced no improvement, the patient was referred to this hospital for further care. In August 1941 an exfoliative dermatitis of undetermined cause had also developed from which he had recovered satisfactorily.

On retraction of the prepuce there appeared an erythematous induration with superficial ulceration. This involvement extended to the margin of the glans, where a denuded area was present at one point. The ulceration on the glans was thoroughly electrocoagulated, and circumcision was performed. A histologic study of the tissue revealed moderate hypertrophy of the rete pegs. Many mitotic figures were found in the stratum mucosum, and a decided round cell infiltration with increased vascularity appeared in the cutis. There was no evidence of invasion below the basement membrane of the epithelium.

The patient was seen again in February 1943, when the penile lesion had healed except for slight superficial thickening. A diffuse discrete papular eruption, however, had appeared on both legs, and a histologic examination of these lesions revealed conditions consistent with molluscum contagiosum. A keratolytic lotion was prescribed.

On presentation, May 29, 1943, a crusted sessile papule approximately 1 cm. in diameter and 4 mm. in thickness had recurred on the glans penis distal to the corona. The eruption on the extremities had not responded to local therapy.

NOTE.—A biopsy of the penile lesion on June 8, 1943 was reported as indicating a diagnosis of erythroplasia, and the area was again electrocoagulated. Sulfapyridine was prescribed as suggested for molluscum contagiosum, but after eight days the patient showed no clinical response and use of the drug was discontinued because of a gastrointestinal reaction.

DISCUSSION

DR. F. J. EICHENLAUB: The lesion on the glans penis is not consistent with erythroplasia of Queyrat, which is a flat, glazed, weeping and deeply infiltrated lesion. It is consistent with Bowen's disease. It is characteristic of an epidermal carcinoma and should be excised promptly.

DR. D. C. SMITH: After removal of the prepuce the patient still had this plaque. I suggest that it is a patch of molluscum contagiosum. The genital lesions did not have the characteristics of keratosis blennorrhagica.

DR. H. F. ANDERSON: Both Bowen's disease and erythroplasia are intradermal epitheliomas, and both become prickle cell epitheliomas. Location of the lesion determines definition. Erythroplasia occurs on the mucous membrane and Bowen's disease on the skin; for this reason there is a slight difference in the histologic structure.

DR. F. A. ELLIS: Bowen's disease appears on any part of the body. It has been reported on the mucous membrane.

DR. REUBEN GOODMAN: The lesion on the penis may be a traumatic nodule.

DR. MAURICE SULLIVAN: In some cases molluscum contagiosum has been reported as responding to sulfapyridine.

A Case for Diagnosis (Pemphigus Vulgaris? Dermatitis Herpetiformis? Erythema Multiforme?).

S. W., a white girl aged 2 years, was admitted to the hospital on Nov. 10, 1942, with a history of generalized development of bullous lesions chiefly about the genital area and on the extremities of ten days' duration. The child had been in good health before the onset of the present illness.

Examination revealed a well developed and moderately well nourished child with an extensive bullous eruption on the face, scalp, mouth, trunk, genital area and extremities. Many of the lesions rose from a noninflammatory base; several contained blood-tinged fluid, and others had become umbilicated, with an iris appearance. The tonsils were hypertrophied but showed no evidence of infection. A generalized lymphadenopathy was present.

Urinalyses revealed no abnormalities. The blood count on admission was reported as showing: hemoglobin content, 14 Gm.; erythrocytes, 4,500,000, and leukocytes, 26,400 per cubic millimeter, with a normal differential distribution and normal platelets. Later, a secondary anemia developed and the leukocytes varied between 6,000 and 44,600 per cubic millimeter; on one occasion the number of eosinophils was elevated to 34 per cent. The prothrombin time was twelve seconds (control, thirteen seconds); bleeding time, four and one-half minutes; clotting time, three and one-half minutes. Later in her stay in the hospital the serum proteins fell to 5.3 per cent with an albumin globulin ratio of 1.4:1. A roentgenogram of the chest revealed normal conditions, as did other laboratory studies.

After her admission to the hospital the temperature showed mild irregular elevations, to 100.6 F. Liver extract and iron cacodylate were administered intramuscularly, and when there was no response to this therapy, a course of superficial roentgen irradiation was given, without effect. On her seventy-sixth day in the hospital the temperature began a spiking course to 104 F. Three injections of naphuride (the American equivalent of "Germanin") intravenously at intervals of two days were given, but when the elevation of temperature continued and red blood cells and casts appeared in the urine use of the drug was discontinued.

When the urinary abnormalities cleared, sulfathiazole by mouth was used, which controlled the febrile reaction. Throughout this period the patient was given multiple transfusions of blood and plasma. Local therapy consisted of antiseptic powders and baths. During her course of one hundred and nineteen days in the hospital, crops of bullae appeared at intervals, the episodes becoming, however, less severe. The child was discharged on March 8, 1943, with the disease in an apparent moderate remission, the skin having assumed a thickened foliaceous appearance, with occasional bullae appearing.

During the interval from discharge until May 25, 1943 the child's status has remained essentially the same. The skin appears chronically thickened, and bullae are present on the extremities. Only local measures have been used in the interim.

DISCUSSION

DR. F. J. EICHENLAUB: I think this is juvenile Duhring's disease.

DR. F. A. ELLIS: I agree with Dr. Eichenlaub. Sulfapyridine should be given by mouth. Children outgrow this disease. They also do well with solution of potassium arsenite.

DR. L. GINSBERG: Dr. Fred Wise says that one does not encounter pemphigus in a child, and I agree with him. The clinical picture is not entirely typical of Duhring's disease, but there are many variations. The platelet counts should be obtained in cases of Duhring's disease. They are usually increased.

DR. F. J. EICHENLAUB: Arsenic is unsuitable for young persons, since arsenical keratoses, which may be serious, are liable to develop.

Pseudoprimary Tuberculous Complex.

M. I. B., a white woman aged 28, was first seen on May 11, 1943, because of a small ulcer on the right cheek of approximately three weeks' duration. At the onset a "pimple" had developed in this area and almost concurrently there was painless enlargement of a right submaxillary lymph node. When the "pimple" was squeezed, a purulent discharge appeared. A local physician prescribed sulfathiazole ointment, and during this therapy the lesion broke down, forming a punched-out ulcer with seropurulent drainage. The ulcer and the gland remained approximately the same size and were relatively reactionless. It was found that the patient's employer had active pulmonary tuberculosis with organisms in the sputum.

Physical examination disclosed a punched-out crusted ulcer approximately 1 cm. in diameter with an indurated margin. The lesion was located on the right cheek 2 cm. behind the angle of the mouth. An enlarged nontender palpable node was present under the angle of the right mandible. The remainder of the physical examination revealed no pertinent abnormal conditions.

Dark field examinations of material from the ulcer and of a lymph node did not reveal Treponema pallidum. The Wassermann and Kahn reactions of the blood were repeatedly negative. Occasional tubercle bacilli were present on direct smear from the lesion, but fungi could not be identified by this method or by culture. Examinations of the urine and blood revealed normal conditions. A Frei intradermal test elicited a negative reaction, as did agglutination tests for Bacterium tularense. The reaction to an intracutaneous test with old tuberculin in a dilution of 1:1,000 was strongly positive.

A roentgenogram of the chest revealed a small deposit of calcium in the lower part of the right lung and several diaphragmatic adhesions, which were interpreted by the tuberculosis service as an inactive primary tuberculosis complex. In view of these observations a diagnosis of a pseudoprimary tuberculous complex of the skin was made and roentgen irradiation was administered to the lesion and the satellite gland.

DISCUSSION

DR. F. A. ELLIS: Total excision is the most helpful procedure.

Erythema Induratum.

J. S. McG., a white woman aged 20, was admitted to the hospital on March 28, 1943, with ulcers of the legs, which began in September 1941, while she was a student nurse at a local hospital. The initial lesion appeared above the right ankle and persisted several months, healing with local treatment. In September 1942, multiple reddened nodules, which later ulcerated, developed on both legs. Sulfathiazole ointment used locally caused increased irritation. Some lesions healed slowly, leaving superficial erosions or pigmented scars; others persisted, with purulent drainage. Local measures, including application of elastoplast bandages, were of no value. No medicines were taken internally. There was no familial history of or known contact with tuberculosis other than during her student nursing service.

Physical examination revealed a well developed white woman weighing 207 pounds (94 Kg.). Bilateral ulcers were present, chiefly on the anterior aspects of the legs. The areas were indurated, erythematous, crusted and tender, the large lesions being 8 to 10 cm. in diameter. Peripheral pigmentation appeared about several of the areas. On the right leg was a healed bluish pigmented scar without induration or ulceration. On the dorsa of both feet a number of small indurated ulcers with punched-out centers were present. There were no other pertinent physical observations.

Laboratory studies revealed that results of blood counts and urinalyses were within normal limits. The sedimentation rate was 28 mm. in one hour. The Wassermann and Kahn reactions of the blood were negative. The sputum did not yield tubercle bacilli, and none were found in smears from the ulcers of the legs. The basal metabolic rate was —19 per cent. An intracutaneous test with 0.1 cc. of 1:1,000 solution of old tuberculin elicited a strongly positive reaction. A roentgenogram of the chest revealed conditions consistent with a slight primary tuberculous infection of questionable stability. Biopsy of a section from an ulcerated lesion of the leg demonstrated numerous well defined areas of perivascular infiltration in the subcutis, consisting of epithelioid cells, lymphocytes and giant cells. Several of the nodules showed central necrosis, and there was thickening of the walls of the vessels. No acid-fast bacilli were present, a basic stain being used for differentiation of the organisms.

Treatment has consisted of mild local measures and rest in bed with elevation of the lower extremities. Intracutaneous injections of 0.1 cc. of old tuberculin in a 1:10,000 dilution were given at weekly intervals. With this therapy the lesions are healing rapidly.

DISCUSSION

DR. THOMAS MURRELL: Erythema induratum is a polymorphic lesion starting with a deep nodule which tends to become more progressive, lesions usually remaining. Could this disease be erythema nodosum?

DR. MAURICE SULLIVAN: Clinically, the picture is unusual, but the lesions are in their end stage. Histologically it is consistent with erythema induratum, probably in the end stage. There are inflammation, pigmentation and scarring.

DR. H. F. ANDERSON: I think these may be tertiary syphilitic lesions. They are healed now, and the brownish pigmentation and symmetric distribution are in favor of syphilis.

DR. D. C. SMITH: These areas have been present for two years; they started with definite nodules in the skin and went through all the stages of erythema induratum. There was a strongly positive reaction to tuberculin.

DR. F. A. ELLIS: The clinical and histologic picture is like that of erythema induratum, but how was she cured so well?

DR. REUBEN GOODMAN: I think this is a case of fat necrosis. The picture is usually that of erythema induratum. A person in whom an unusual amount of fat develops is liable to have areas of fat necrosis. It may be a drug eruption.

Keratosis Follicularis.

E. T. R., a white farm manager aged 74, was first seen in August 1939 with a pruritus of the skin associated with the formation of wartlike lesions over the sternal region of the chest, the shoulders and the back. The eruption had been present intermittently for fifteen to twenty years.

On examination pinkish brown verrucous lesions from 1 to 4 mm. in diameter were present in the interscapular, upper sacral and lower sternal areas. There were scattered lesions on the back and shoulders, with moderate roughening of the skin and a tendency to symmetric involvement. Increased pigmentation appeared in the involved areas. Histologic studies of the skin revealed a hyperkeratosis both in the epithelium and about the openings of the hair follicles, the bases of which were atrophic. There was a moderate hypertrophy of the epithelium, with perivascular infiltration throughout the papillary and subpapillary layers.

A tentative diagnosis of keratosis follicularis was made and superficial roentgen irradiation administered, with only slight and temporary improvement.

The patient was seen again in February 1943. The character of the eruption was unchanged, and vitamin A in a dosage of 60,000 U. S. P. units daily was prescribed. At this presentation there has been definite clinical improvement.

DISCUSSION

DR. F. A. ELLIS: Clinically the lesions suggest keratosis follicularis, but the biopsy report is not compatible. It does not show lacunas or *corps ronds*. This could be just an excoriated scar which developed into hyperkeratosis.

DR. L. GINSBURG: There is not sufficient evidence for Darier's disease yet, but this is not a plain keratosis. The length of time is significant. The slight amount of crusting is against keratosis. This eruption is partly vesicular, not crusted. It should have more lesions. I can suggest no other diagnosis though.

DR. J. L. CALLAWAY: By cutting deeper into the block one might prepare a more typical slide. I think it is keratosis follicularis.

DR. REUBEN GOODMAN: Lesions on the palms suggest Darier's disease. This seems significant, and I feel that it determines a diagnosis of keratosis follicularis.

Porokeratosis.

G. M., a white youth aged 17, was first seen in 1941, with circular lesions on both sides of the neck which had appeared five years previously and gradually extended. One year later a similar area was noticed on

the left arm. There have been no symptoms except mild pruritus and little change in the size of the lesions in the past two years. A history of numerous fractures since infancy was also obtained, and from the physical examination a diagnosis of osteogenesis imperfecta was established. Therapy has also been administered since his admission to the hospital, in 1941, for congenital neurosyphilis.

Examination of the skin revealed irregularly circular areas with elevated keratotic collars appearing as fused papules and enclosing an atrophic center. Lesions were present on both sides of the neck and on the left forearm and varied from 3 to 5 cm. in diameter.

Histologic studies showed a definite localized type of acanthosis with mild hyperkeratosis and a thick stratum granulosum, involving both sweat glands and hair follicles. A deep dilated area occurred epidermally at one point and was filled with horny material and leukocytes. The sweat glands were numerous, but serial sections disclosed no decided changes until the epidermis was reached. In most areas the duct was normal throughout its course. A light inflammatory infiltrate with vascular and connective tissue proliferation appeared in the corium.

Xeroderma Pigmentosum with Multiple Epitheliomas of the Skin.

E. E., an unmarried white woman aged 47, was first seen in the dermatology and syphilology clinic in 1933, complaining of a lesion on the left side of the lower lip of three weeks' duration. The skin on the exposed surfaces of the body had been freckled, erythematous, dry and scaly since childhood. Diagnoses of xeroderma pigmentosum and epithelioma of the lip were made, and radium was applied to the involved area, with a good result. Since the initial admission the patient has been followed regularly as other epitheliomas appeared and surgical excision, radium or roentgen therapy administered, depending on the sites of involvement on the face and forearms. In 1938 an epithelioma on the lip metastasized to the right supraclavicular nodes; there was no involvement of the chest, and the area was treated successfully with roentgen irradiation. In 1940 a roentgen ray necrosis of the lower lip occurred after therapy to lesions which had appeared in the interim. Surgical excision of the lower lip was undertaken, the patient consistently refusing a plastic repair of this defect.

The patient's brother was seen here in 1931 at the age of 30, and diagnoses of xeroderma pigmentosum and epidermoid carcinoma of the nose were made. The nasal involvement was so extensive that progression occurred in spite of radium and roentgen therapy. It was reported that he died in 1933.

On presentation today there is no evidence of the recurrence of malignant lesions. The skin on the exposed surfaces is as previously described, and a large defect of the lower lip is present.

NOTE.—The patient was seen on Aug. 25, 1943, with a raised, firm lesion 1 cm. in diameter on the left cheek; it had had its onset three weeks previously. The lesion was completely excised, and a biopsy was reported as revealing a squamous cell epithelioma of grade II.

Rocky Mountain Spotted Fever.

R. R., a white female rural resident aged 32, was admitted to the hospital on May 25, 1943, with a history of malaise, headache and backache of seven days' duration. Four days prior to her admission a spotted rash appeared on the wrists, forearms and ankles. No history of contact with ticks could be obtained.

Physical examination revealed an acutely ill patient with a temperature of 102 F. Reddish macules were present on the palms and soles, about the wrists and ankles and on the arms and legs, chest, nape of the neck and flanks. The remainder of the examination revealed essentially normal conditions. On her presentation, four days after admission, the eruption had faded moderately.

The erythrocyte count was 4,100,00 per cubic millimeter; the hemoglobin content, 12 Gm., and the leukocyte count, 8,000, with a moderate shift to the left. The urine was normal. On the day following admission agglutination tests with Bacillus proteus elicited positive reactions with a dilution to 1:320, the titer increasing to 1:1,280 before her discharge. Results of other laboratory studies were normal.

Monocytic Leukemia Cutis.

A. J. S., a white farmer aged 58, was admitted to the hospital on May 19, 1943, stating that three to four months previously he had noticed the appearance of red slightly elevated nodules on his body which produced no symptoms. Two months later fatigability and weakness appeared, and five days prior to admission there was an abrupt onset of severe aching pain and tenderness over the bones of the chest. There has been a recent loss of weight of 9 pounds (4.1 Kg.) and lately transitory hemorrhagic areas have appeared on his body.

Physical examination revealed a pale, well developed white man. Numerous reddish purple nodular subcutaneous lesions up to 10 mm. in diameter and rounded in outline were present in a generalized distribution but chiefly on the abdomen, chest and back. The areas were slightly raised, infiltrated, smooth and nontender and did not blanch on pressure. Petechiae were present and numerous pigmented nevi and seborrheic keratoses appeared on the back and chest. The lymph nodes were enlarged generally and were slightly indurated, nontender and discrete. On examination of the chest exquisite tenderness was elicited over the clavicles, sternum, manubrium and lower ribs. Moist rales were present throughout the lungs. The remainder of the observations on the physical examination were noncontributory.

Laboratory observations were reported as follows: A blood count on May 20, 1943 showed a hemoglobin content of 10.2 Gm. (Sahli), 3,520,000 erythrocytes and 400 leukocytes per cubic millimeter, of which 2 per cent were band and 5 per cent stab polymorphonuclear leukocytes, 58 per cent small lymphocytes, 9 per cent premonoblastic and 3 per cent transitional monocytes, and 23 per cent degenerated cells. The average diameter of the cells was 7.25 mm.; the hematocrit reading was 34, and platelets numbered 32,000 per cubic millimeter. With Goodpasture's peroxidase stain, the immature cells were interpreted as monocytic in origin. A sternal marrow puncture was repeated as showing aleukemic leukemia, apparently monocytic with decided granulocytopenia. The urine was normal; the bleeding time was seven and one-half minutes, and the clotting time three minutes. A tourniquet test revealed 15 to 2 petechiae in a 3 cm. circle; the prothrombin time was fifteen seconds (control, fourteen seconds). The Wassermann and Kahn reactions of the blood were negative. The urea level of the blood was elevated to 92 to 132 mg. per hundred cubic centimeters during the hospital course. Results of other laboratory studies were noncontributory.

Histologic examination of a nodule on the abdomen showed the superficial portion of the corium to be the site of a definite diffuse infiltrate, the cells appearing large but exhibiting some degree of pleomorphism. The nuclei varied from oval or round to notched and kidney shaped; occasional mitoses were present. The cells were surrounded by a wide zone of cytoplasm with indefinite boundaries. Nucleoli were present and prominent in some of the cells. A fine reticulum partly replaced the larger collagenous fibers in the area. It was felt that the conditions observed were consistent with monocytic reticulosis of the skin.

During the patient's course in the hospital the leukocyte count has continued depressed, never exceeding 600 cells per cubic millimeter. The cutaneous lesions have varied daily, and on presentation many of the original infiltrations have resolved. A large number of petechiae and ecchymoses have appeared, and the patient's general status has continued poor in spite of vigorous supportive therapy, including multiple blood transfusions and administration of pentnucleotide and liver extract.

NOTE.—The patient died on May 30, 1943. Permission for autopsy was not obtained.

Addison's Disease.

W. M., a white man aged 31, was first seen on July 2, 1939, because of pain in the right shoulder. A brownish discoloration of the skin was noted which had been present for an indefinite time. On July 24, 1939 he was readmitted and a diagnosis of Addison's disease established. Histologic studies of the skin confirmed this diagnosis.

The patient has been followed at intervals, and in December 1942 administration of desoxycorticosterone was started. In February 1943, desoxycorticosterone acetate pellets (125 mg. × 4) were implanted and his course had been satisfactory until the present symptoms of cough, pain in the chest and malaise appeared six days prior to his admission to the hospital.

Physical examination reveals a generalized brownish pigmentation, more evident on the elbows, knees, abdomen and back, where it assumes a slate blue hue. There is decided pigmentation of the mucous membranes of the mouth. The conditions in the chest are those of a pleural effusion probably tuberculous in origin.

Glossitis Rhombica Mediana.

Miss C. C., a white woman aged 45, was first seen in January 1943, complaining of an asymptomatic lesion at the base of the tongue of approximately two years' duration. An elevated indurated plaque approximately 1.5 by 2.5 cm. was present on the dorsum of the middle third of the tongue. The surface was composed of several smooth nodular areas separated by superficial fissures.

No treatment was administered, nor was there any change in the appearance of the lesion until the patient's presentation today, when a superficial ulceration, possibly traumatic in origin, has appeared.

DISCUSSION

DR. F. J. EICHENLAUB: I do not think this lesion conforms with glossitis rhombica mediana, since it is a definite ulcer and is inflammatory. It suggests a tuberculous ulcer.

DR. D. C. SMITH: At other times it was a smooth, atrophic, rhomboid lesion and not ulcerated. The erosion now, I believe, is traumatic, possibly from hard foods.

DR. J. L. CALLAWAY: I think a biopsy should be performed. This may be tuberculosis.

Secondary Syphilis, with Asymptomatic Central Nervous System Progression.

C. W., a Negro aged 25, was first seen in August 1942, with papular and annular cutaneous lesions, patchy alopecia and generalized lymphadenopathy. The Wassermann, Kahn and Kline reactions of the blood were strongly positive; the titer of the Kahn reaction was 80 units. A diagnosis of secondary syphilis was made, and antisyphilitic therapy was instituted, with a triweekly intensive schedule (thirty-six injections of an arsenical and twelve of a bismuth preparation over a period of twelve weeks). The patient reported regularly, receiving 67 mg. of dichlorophenarsine hydrochloride (3-amino-4-hydroxyphenyldichloroarsine hydrochloride) three times weekly and 0.2 Gm. of bismuth subsalicylate once weekly without reaction. The spinal fluid on Oct. 19, 1942 was normal except for a trace of globulin.

On November 11, after receiving a total of nineteen injections of the arsenical and seven of bismuth subsalicylate, the patient lapsed and was lost from observation until April 8, 1943. On reexamination there were no abnormal physical conditions, all lesions having healed completely. The Wassermann reaction was strongly positive; the Kahn reactions were 1, 3 and 4 plus; the titer of the Kahn reaction was 4 units. Examination of the spinal fluid revealed a moderate increase in globulin, a total protein content of 70 mg. per hundred cubic centimeters and 215 cells (80 per cent lymphocytes and 20 per cent polymorphonuclear leukocytes); the Wassermann reaction was doubtful with 0.2 cc. and strongly positive with 0.6 and 1 cc.; the colloidal gold curve was 5 5 3 2 1 1 0 0 0 0. The patient has been given routine therapy.

DISCUSSION

DR. F. A. ELLIS: The man definitely had a relapse. He certainly has a neurorecurrence with a meningovascular type of syphilis. It will be interesting to see whether he will respond again to routine therapy.

DR. REUBEN GOODMAN: It is interesting to see that he had nineteen injections of clorarsen (phenarsine hydrochloride). Is clorarsen as good as it is thought to be?

DR. R. D. KIMBROUGH: My colleagues and I have some patients on a twenty week schedule, which is apparently satisfactory.

DR. E. E. BARKSDALE: Could this be a progression rather than a recurrence, in view of the increase of globulin in the first examination of the spinal fluid?

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

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Oct. 5, 1943

Relapsing Febrile Nodular Nonsuppurative Panniculitis (Weber-Christian Disease). Presented by DR. THOMAS N. GRAHAM.

A. R., a white woman aged 63, born in Spain, is presented from the New York Hospital, where she was first examined on Aug. 6, 1943.

The patient complained of "lumps under the skin" of her arms and hips which, she stated, had been present for the preceding six months. The onset, according to the patient, was accompanied by systemic symptoms, including an elevation of temperature which lasted three days. The disease was diagnosed "grip" by her physician. Originally the subcutaneous lesions had involved the arms, hips and thighs, but the lesions on the thighs disappeared within a few weeks. The patient complained of pain on motion of the arms, of articular pains and of weakness. Her weight had decreased 25 pounds (11.3 Kg.) during the preceding six months.

Examination on admission showed a large subcutaneous indurated mass on the lateral aspect of each arm. There were also numerous subcutaneous stony hard nodules ranging from 0.5 to 3 cm. in diameter. Above each iliac crest were numerous similar nodules and long cordlike lesions 1.5 cm. in diameter. The lesions were slightly tender on pressure.

During our period of observation many of the lesions underwent involution.

At the present time there remain a number of nodules on each arm just above the elbow and a cordlike lesion above the left iliac crest, with a few nodules above the right iliac crest.

The urine was normal. A blood count showed: hemoglobin content, 11.3 Gm.; red blood cells, 4,510,000; white blood cells, 6,500; lymphocytes, 76 per cent; monocytes, 2 per cent; polymorphonuclear neutrophils (mature), 7 per cent, and band forms, 2 per cent. The result of a Mazzini test for syphilis was negative.

Biopsy on August 24 of a specimen from a lesion in the left arm showed a firm tissue which when cut presented a homogeneously pale surface which gritted to the knife. Microscopic examination was reported by Dr. N. Chandler Foot as showing a sclerosing fibrous replacement of subcutaneous fatty tissue which alternated with areas where the fat was sometimes acutely and sometimes subacutely inflamed, with polymorphonuclear leukocytes or lymphocytes, as the case might be, forming the exudate. There were some areas showing breaking up of fat cells with the accompaniment of fat phagocytosis, which indicated foci which tended to stain red with Masson technic, together with early stages of calcification. The appearance of the lesion most closely approximated the disease described by Dr. Henry Christian and known as panniculitis.

Plain roentgenograms of the abdomen in both the anteroposterior and the posteroanterior projections plus tangential views of the mass in the left lower quadrant of the abdominal wall outlined a flattened, roughly ovoid area in the subcutaneous fat layer, which was poorly encapsulated and contained extensive multiple minute specks and linear calcific shadows, varying in size from 1 to 3 mm. There was a similar but less clearly defined area in the fat of the abdominal wall in the right side somewhat higher in location. The area previously described appeared to be approximately 15 by 10 by 4 cm. The impression was that of calcification in areas of fat necrosis, consistent with relapsing nodular nonsuppurative panniculitis.

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: When I examined the patient the history had not yet become available, and I had the impression that this was a foreign body reaction because she gave a history of receiving some injections several years ago. When such cases were first reported, there was confusion as to whether the reactions were due to bromides, to iodides or to some other substance, and in view of the fact that the cause is still obscure, it should be considered that some foreign body, especially camphor liniment, liquid petrolatum or some other medicament, may have initiated the reaction.

DR. JESSE A. TOLMACH: I obtained a history similar to that obtained by Dr. Abramowitz. The patient stated that she had received injections in the arms and in the skin of the abdomen.

DR. J. LOWRY MILLER: The lesions on the arm suggest scleroderma, as was true of one lesion in the patient reported from the Vanderbilt Clinic (Nodular Nonsuppurative Panniculitis, ARCH. DERMAT. & SYPH. **47**:82-96 [Jan.] 1943) which definitely suggested scleroderma or morphea. Biopsy established the diagnosis of panniculitis. Most of the time, patients with true generalized panniculitis have fever, and in this woman fever may develop with subsequent attacks. There are a number of cases reported, however, in which the lesions were due to local injections. If this woman gives a definite history of injections in the affected regions, that possible cause should be investigated. One other feature usually found is general atrophy of the healed skin, with depression of the entire skin over the area. I did not notice any such condition in the patient shown tonight.

DR. CHARLES WOLF: Recently I had an opportunity to observe a case in which were typified the clinical manifestations of the Weber-Christian syndrome. The eruption consisted of soft, doughy, globular tumors situated subcutaneously and involving the face, breasts and lower extremities. Such lesions have three ways of progressing: Some disappear spontaneously; some go on to liquefaction necrosis, and some assume the sclerotic stage. These doughy tumors feel like lipomas and are sensitive on pressure. In some cases there is a history of allergy.

DR. THOMAS N. GRAHAM: In the roentgenograms of this case two types of shadows were observed: one type diagnosed by the roentgenologist in his complete report as having been produced by injections of a heavy metal, probably bismuth, and the other diagnosed as having been produced by lesions of panniculitis, the latter type of shadows corresponding identically to the cordlike lesions palpable over the iliac crests. The patient stated that she had received a number of injections twenty or more years ago but that none of them had been at the sites diagnosed as panniculitis. I believe that fat necrosis resulting from injections can be ruled out in this case from the history, the roentgenologic observations and the results of histologic study.

It is true that in most recorded cases of this disease depressions of the skin following involution of the lesions have been observed. There have, however, been cases reported in which the lesions on involution left normal-looking skin without any retraction. A case of this type was reported by Cummins and Lever (Cummins, L. J., and Lever, W. F.: Relapsing Febrile Nodular Nonsuppurative Panniculitis [Weber-Christian Disease], ARCH. DERMAT. & SYPH. **38**:415-426 [Sept.] 1938).

The patient presented tonight had fever and malaise for three days following the onset of the disease. She has not yet had a recurrence of these symptoms. In many of the cases reported, intervals between the appearance of new lesions with accompanying systemic symptoms were over one year. The onset in this case was eight months ago, and it is probable that the patient will have relapses in the future.

Lupus Vulgaris; Tuberculosis Ulcerosa Orificialis; Tuberculosis of the Larynx; Active Pulmonary Tuberculosis. Presented by DR. MABEL SILVERBERG.

A. H., a man aged 44, is presented from the dermatologic clinic of the New York Hospital. On routine examination a year and a half ago he was found to have active pulmonary tuberculosis, and since then the sputum has repeatedly yielded tubercle bacilli. For the past six months he has been hoarse. Three months ago the lesions now present on the tongue and on the side of the neck developed.

On the dorsum of the tongue there are two plaques, each roughly 1 cm. in diameter, erythematous, infiltrated and centrally ulcerated. On the right side of the neck there is a dull red irregular infiltrated plaque with an adherent linear scale at the center. The scale marks the site of removal of a previous biopsy specimen. The tissue is extremely friable. No apple jelly nodules were seen on diascopic pressure.

The Mazzini test elicited a negative reaction. Biopsy of the lesion on the neck revealed pronounced hyperkeratosis, with irregularity of the rete pegs. Immediately beneath the dermis there was an intense inflammatory exudation, in which there were epithelioid cells, giant cells and one small tubercle. There was also evidence of subcuticular fibrosis. The diagnosis was tuberculosis of the skin.

DISCUSSION

DR. MAURICE J. COSTELLO: The patient is probably suffering from advanced pulmonary tuberculosis, and there is little that can be done for him. Tuberculosis orificialis and laryngeal tuberculous ulcerations almost invariably are associated with advanced pulmonary tuberculosis.

DR. FRANK C. COMBES: This patient presents a picture such as I have never seen before in a case of tuberculosis. He has advanced pulmonary disease with terminal involvement of his larynx and tongue. Only recently a typical patch of lupus vulgaris has developed on his neck, apparently by autoinoculation. This is unusual. I wonder if any one else has previously observed this course of events. It would be interesting to study the tuberculin allergy in this patient. Usually in this stage there is a negative anergy.

DR. MABEL SILVERBERG: It has been suggested that the lesions on the tongue be treated with radium, because they bother the patient a great deal.

DR. E. WILLIAM ABRAMOWITZ: I suggest local applications of gauze saturated with hydrogen peroxide, and at the same time sodium iodide by mouth.

DR. MAURICE J. COSTELLO: I should certainly be cautious about the administration of potassium iodide to patients suffering with pulmonary tuberculosis. It is well known that this drug activates pulmonary tuberculous disease. I think this man should be hospitalized, because he has open tuberculosis and is a menace to others. I believe there is no hope of permanently clearing the lesions on the tongue unless his pulmonary disease is controlled.

DR. FRANK C. COMBES: I agree with Dr. Costello. Locally, ethylaminobenzoate or lozenges containing nupercaine might be given to relieve his pain.

DR. FRANK VERO: I had the opportunity to watch a patient with a similar condition on the tongue over a period of several years. Lactic acid was first used, and the lesions did not heal; electrocoagulation cleared them, although they recurred after two years. Another patient with oral lesions was treated at the Polyclinic Hospital, and the mouth healed after treatment by electrocoagulation, but the patient died in a few months.

DR. MABEL SILVERBERG: The patient has been hospitalized.

A Case for Diagnosis (Lymphoblastoma?). Presented by DR. ISADORE ROSEN.

R. M., a woman aged 52, came to the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on Sept. 1, 1943, with a generalized eruption of three years' duration. The eruption began with dryness and cracking of the palms and gradually spread to the present extent.

The patient presents universal erythema and thickening of the skin. The palms and soles are hyperkeratotic and yellowish. There are considerably enlarged lymph nodes in the axillas and in the inguinal and cervical regions. The hair of the scalp and the eyebrows are thinned.

The urine was normal, and the Wassermann reaction of the blood was negative. The blood count showed 3,780,000 erythrocytes and a hemoglobin content of 12 Gm. per hundred cubic centimeters, or 72 per cent, with a color index of 0.97. There were slight anisocytosis and slight achromia. There were 10,950 leukocytes, with polymorphonuclear neutrophils 21 per cent, eosinophils 3 per cent, monocytes 6 per cent, lymphocytes 66 per cent and band forms 4 per cent.

Two biopsies were reported as showing lymphoblastoma.

DISCUSSION

DR. TIMOTHY J. RIORDAN: This is a good time, I think, to call attention to two things: First, as brought out by Dr. Wise, one needs time to make a diagnosis clinically. The second point is that the same obtains for a diagnosis from a histologic examination. Often these early lesions suggest a lymphoblastoma histologically; but they only suggest it, and there is too much temptation to accept as a diagnosis what is only a suggestion in the microscopic picture. The point is that there is no harm in delaying the diagnosis and repeating the biopsy.

DR. FRED WISE: The patient was presented for diagnosis. I suggest hospitalization, to enable further investigations to be made, including sternal puncture, repeated blood counts and histologic examination of the skin and of an enlarged lymph node. Beside the various leukoses, the giant follicular lymphadenoma described by Symmers should also be borne in mind.

DR. E. WILLIAM ABRAMOWITZ: In connection with this subject, I heard an interesting story from an Army physician about a soldier who had had large lymph nodes in his neck, diagnosed as Hodgkins' disease. He was treated at a well known hospital and recovered sufficiently to be inducted into the army. He took some mild mercurous chloride, and large cervical nodes and fever developed. While he was in the Army hospital waiting for the reaction to subside, he was given another dose of the drug and the same type of reaction recurred.

DR. ISADORE ROSEN: I will follow some of the suggestions made, namely, sternal puncture and excision of one of the nodes for microscopic examination.

NOTE.—Subsequent reports of these examinations revealed nothing significant.

Lupus Erythematosus. Presented by DR. MARGARET M. KLUMPP.

J. D., a man aged 56, a shipbuilder, is presented from New York Hospital. Four years ago he noticed an

eruption on the right temple which then spread over most of the forehead, ears and lips, involving also the mucous membranes of the mouth. He had been exposed to sunlight because of his work. He was given many injections of gold and of bismuth preparations, without improvement. Roentgen and ultraviolet ray therapy caused the eruption to become worse. The patient drinks large quantities of alcoholic beverages.

When the patient was first seen, in September, 1943, the aforementioned areas were covered with erythematous scaly lesions, with telangiectasia and atrophy. The labial and buccal mucosae show many erosions and erythematous areas.

DISCUSSION

DR. ISADORE ROSEN: I understand the patient is employed in a shipyard and is exposed to the sun every day. He has not been instructed to avoid this exposure. How can one expect to relieve a patient whose skin is photosensitive when he continues to expose himself to sunlight?

DR. HARRY C. SAUNDERS: I treated a series of patients with lupus erythematosus with gold salts fourteen or fifteen years ago, and I remember well that the patients who persisted in exposing themselves to sunlight responded poorly, or not at all, to treatment, and those who cooperated and kept away from the sun did much better.

DR. MAURICE J. COSTELLO: I have had an opportunity recently of suggesting general measures for patients with lupus erythematosus. They were members of the New York Police Force, who are daily exposed to the sun for long periods of time. It was arranged that they should work indoors, but no improvement resulted. I think the sole influence of the sunlight in the fixed type of lupus erythematosus has been overstressed. I also think that the influence of sunlight as the sole cause in precipitating the disease has been overemphasized. As to suggestions for therapy, superficial applications of solid carbon dioxide might help this patient, treating one small area at each sitting.

DR. FRANK C. COMBES: I should make every effort to keep this man out of the direct rays of the sun. However, I agree that not all patients with this disease are adversely affected by exposure. I recall many patients who improved with ultraviolet irradiation from a water-cooled quartz mercury vapor arc lamp and even with radium irradiation. Of course no patient receiving gold should be exposed excessively to the sun, as the heavy metal photosensitizes the skin.

DR. ISADORE ROSEN: I am surprised at this discussion and the radical change in the ideas of some of the members as to the effect of sunlight on lupus erythematosus. I have seen several cases in which the fixed type developed into the acute fulminating form with fatal ending.

DR. E. WILLIAM ABRAMOWITZ: Montgomery has said that in a third of a series of 30 cases of acute disseminated lupus erythematosus, the disease started as a chronic localized discoid type (*Proc. Staff Meet., Mayo Clin.* **15**:678 [Oct. 23] 1940). I am sure that many have seen patients with the discoid type of lupus erythematosus as well as persons who have had no previous cutaneous lesions of lupus erythematosus manifest an acute dissemination of the eruption after exposure to the sun. It is true, of course, that this might happen from other causes not connected with exposure to the sun. I think that this society should be careful in putting itself on record that exposure to the sun for patients with any type of lupus erythematosus is not harmful. Patients who are receiving gold or any other photosensitizing drug should be cautioned especially about exposure to the sun. Because some persons with the discoid type of lupus erythematosus do not improve while avoiding the sun is no reason for saying that the sun may not be harmful to such persons. I believe it is incorrect to apply the term "fixed" to chronic localized discoid lupus erythematosus, because the term "fixed" as it is now used in dermatology designates recurrent exacerbations in situ with intervals of normal appearance in the affected areas.

DR. CHARLES S. MILLER: I should hesitate to expose any patient with lupus erythematosus to the sun. A young woman was admitted to my service at Queens General Hospital with a discoid lesion on the nose; she was exposed to ultraviolet irradiation (Alpine light) therapy twice within one week, acquired a generalized lupus erythematosus, was severely ill and had a fever for about seven weeks.

DR. MAURICE J. COSTELLO: Certainly the previous speakers have misinterpreted my remarks. No sensible person would suggest exposure to sunlight as treatment for lupus erythematosus. I was trying to make the point that the cause of lupus erythematosus is found in many other factors than photosensitivity and that sunlight is seldom the sole cause. I think that was Dr. Chargin's idea too. In many patients dissemination develops in midwinter, when the ultraviolet rays are negligible. The disease even occurs in full-blooded Negroes, whose pigmentation should afford ample protection from the irritating effects of the sun's rays. No one would say that the disease is never seen in coal miners, who are not unduly exposed to sunlight. I will go on record now as saying that a person with lupus erythematosus should not be exposed to sunlight, but as to the cause of lupus erythematosus, sunlight and exposure to sunlight alone are not the primary or only cause.

DR. THOMAS N. GRAHAM: During the past few years Dr. Eugene Traub, Dr. George Lewis and I have treated a number of patients with lupus erythematosus for whom we used autogenous vaccines. Assuming that lupus erythematosus is due to a streptococcic focus, we made cultures of the stool, sputum and material from the throat and treated the patient with vaccine prepared from organisms grown on culture which gave positive reactions to intradermal tests. In some cases in which there had been no response to injections of bismuth or gold preparations we had good results with this therapy. In a number of cases we used ordinary cold vaccine, which contains practically all the organisms which had previously grown on our cultures, and some of the therapeutic results were excellent. The percentage of cures was not high, but some of the results were better than those accomplished with the accepted gold or bismuth therapy. I suggest that this form of therapy be given a trial in this case.

DR. FRED WISE: This patient was presented for therapeutic suggestions. Dr. Sulzberger has been using small doses of mapharsen in treatment of rebellious eruptions. I saw 2 of his patients who showed considerable improvement from injections of mapharsen but not complete resolution of the lesions.

A Case for Diagnosis (Erythema Multiforme? Dermatitis Medicamentosa, Possibly Caused by Monomethylstilbestrol Palmitate?). Presented by DR. MABEL SILVERBERG.

Mrs. M. D., aged 50, has been under treatment in the thyroid-endocrine clinic of the New York Hos-

pital for a menopausal syndrome since April 20, 1940. From July 1940 to July 1943 she received various natural estrogens and several synthetic estrogens. From July 6, to Sept. 16, 1943 the patient took gradually increasing daily doses (2.5 mg. to 10.0 mg.) of a synthetic estrogen, monomethylstilbestrol palmitate. On September 16 an intensely pruritic eruption consisting of five bright red papulovesicles developed on the right leg. Use of the estrogen was discontinued. Estrone sulfate was given for one week, and then all internal medication was stopped. By September 27 discrete, ungrouped, erythematous macules and maculopapulovesicles had appeared on the backs of the hands, arms and legs. Iris-shaped lesions were present on the buttocks.

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: Reactions such as these, as well as others, have been reported from the use of the drug. Most of them are local indurations at the sites of injection. It is natural to assume that the eruption was due to the drug because it appeared following its ingestion. The patient gives a history, however, of a similar eruption many years ago. I think it might be advisable to administer the drug once more as a test.

DR. MARGARET M. KLUMPP: I saw this patient in the endocrine clinic when she first came into the hospital, and she had large bullae. She had been in the country about a week before. She had been receiving the estrogen for some time, without reactions. In the endocrine clinic it could not be decided whether it was a drug eruption or not.

DR. MABEL SILVERBERG: The eruption at first consisted only of bullae and then turned into a typical erythema multiforme, even with lesions of the iris variety. Natural estrogens are oxidized to about 80 per cent in the body, while the synthetic estrogens are oxidized to only about 40 per cent, and therefore, there is much more cumulative effect with the synthetic type. Toxic effects are shown by nausea, headaches and dizziness, which occur more often with the synthetic preparations. E. Shorr, F. H. Robinson and G. N. Papanicolaou were among the first to report on this difference between natural and synthetic estrogens (*J. A. M. A.* **113**:2312-2318 [Dec. 23] 1939).

Left Postoperative Anophthalmos; Uveitis and Choroiditis of the Right Eye, Possibly Due to the Virus of Lymphogranuloma Venereum.
Presented by DR. HELEN O. CURTH.

J. T., a white man aged 23, is presented from the Vanderbilt Clinic. He has had no serious illnesses. He admits frequent intercourse with prostitutes but says that he has not had gonorrhea or syphilis. He had "kernels" in the inguinal areas about seven years ago, and at one time he had a genital sore which lasted about three days. Five weeks ago he suffered from chancroids of the scrotum.

In January 1939 first the left eye and one week later the right eye became inflamed, and the inflammation persisted. In February 1940 operation on a sinus (submucous resection) was undertaken to relieve the inflammation of the eyes. In January 1941 a diagnosis of old iritis of both eyes, posterior synechiae and vitreous opacities was made. The retinas and disks could not be seen. In July 1941 iridectomy was performed on both eyes. In August 1941 the diagnosis was uveitis with hypopyon (left eye) of endogenous origin. In September 1941, two days after cyclodiathermy to the left eye, arthritis of the left ankle developed. The left eye was enucleated in October 1941. The highlight of the pathologic report was striking infiltration of the iris by polymorphonuclear leukocytes. The ciliary body, the lower portion of the choroid, the retina and optic nerve were infiltrated by lymphocytes. The episcleral vessels over the lower portion of the globe were surrounded by inflammatory cells. The retina was totally detached. The inflammatory reaction of the globe did not suggest sympathetic uveitis. No foreign body or foreign body reaction was seen.

Treatment of the remaining, diseased, (right) eye consisted of administration of sulfadiazine and typhoid vaccine, irrigation of the sinuses and administration of sodium salicylate orally and by iontophoresis. There was some improvement of the choroiditis. After the clearing of the vitreous it was noted that there was perivascular sheathing of the arteries and veins throughout the fundus. In August 1943 the right eye became painful again and the patient was readmitted to the eye institute.

When seen at the end of August 1943, he had two dime-sized sharply circumscribed deep ulcerations on both sides of the scrotum of about three weeks' duration. The lesions had a dirty base. Repeated smears for Ducrey bacilli and three darkfield examinations failed to reveal their presence. Repeated tests for Ducrey bacilli elicited strongly positive reaction. Reactions to four Frei tests with different human antigens were strongly positive. Intradermal control tests with saline solution were negative. The inguinal lymph nodes were not enlarged. Results of a proctologic examination were normal. The Kline and Wassermann reactions were negative. The hemoglobin content, red blood cell and white blood cell counts, blood sugar content and roentgen examination of the chest were normal. The proteins were 7.4 mg. (albumin 5.3 mg. and globulin 2.1 mg.). The temperature was normal. Tests with tuberculin in dilutions of 1 : 100,000 and 1 : 10,000 elicited negative reactions and a positive reaction in a dilution of 1 : 1,000.

An infection of the nail bed of the right big toe was found. The right eye showed an operative coloboma of the iris and recurrent uveitis with hypopyon. There was severe photophobia. Vision was reduced to the perception of light.

In view of the clinical picture, a diagnosis of chancroids of the scrotum was made. With treatment with sulfathiazole, the lesions healed in six to ten days. The nail bed of the right big toe was incised. In view of the strongly positive Frei reactions and the statement of the patient that vision had improved after the intradermal Frei tests, treatment of the infection of the eye with sulfathiazole orally and Frei antigen intravenously was begun. No chill or fever was noted to follow the intravenous injections. After three days of this treatment the vitreous was clearing noticeably and a large choroidal lesion was visible. The patient has by now taken sulfathiazole for five weeks (first 2 Gm., then 1.5 Gm. daily), and has received eleven injections of Frei antigen intravenously. He can now see objects at 3 feet (1 meter).

DISCUSSION

DR. FRANK C. COMBES: I agree that these ocular changes are probably due to the virus of lymphogranuloma venereum. However, there are three points against this interpretation, although none of them are of great moment: first, the normal albumin-globulin ratio in the presence of an active lymphogranulomatous process; second, the negative response to intravenously injected Frei antigen; and, lastly, the length of time

which has elapsed since the original adenopathy. Has the virus been dormant all this while? I suggest a complement fixation test.

DR. MAURICE J. COSTELLO: The favorable response to sulfathiazole is in favor of the diagnosis.

DR. WILLIAM CURTH: We have published the report of another case with loss of vision due to the virus of lymphogranuloma venereum, in which the albumin-globulin ratio was also normal.

DR. HELEN O. CURTH: I do not think the lack of febrile response to intravenous injections of Frei antigen speaks against the diagnosis of lymphogranuloma venereum. We have seen several patients with this disease who did not respond with fever to intravenous injections of Frei antigen. A possible explanation in this case may be the fact that the patient has received hundreds of typhoid injections during the last few years. All treatments given by the ophthalmologists, as well as irrigations and operations on the sinuses, have failed to improve the process in the eye. The disease of the eye was considered to be of unknown cause. According to the studies of Dr. Macnie, diseases of the uveal tract may be due to lymphogranuloma venereum.

Defluvium Capillorum. Presented by DR. HERMAN GOODMAN.

Mrs. H. D., aged 37, a white woman with one child, had a tooth extracted on May 4, 1943 under procaine hydrochloride anesthesia. Some three months later, in August 1943, she noted an extreme loss of hair, normally profuse. At first the loss was most noticeable over the top of the head, with a rim of hair at the forehead and practically all the hair retained at the occiput between the ears. The hair was lost progressively until at the time of presentation she has practically no long hairs on the scalp except at the occiput between the ears. In effect, except for a fair number of short hairs, the appearance of the alopecia is close to that of the hippocratic type of loss of hair of the adult male. The hair of the eyebrows, eyelashes and axillas is retained. There may be some loss of hair of the pubic region. The short hairs of the legs are retained.

Prior to the loss of hair, in August, the following observations were noted: in April, 1943, there was twitching of both eyes, which ceased on a visit to the country on July 5. On that day, however, she noted local painful enlargements of the back of the neck—possibly enlarged cervical or postcervical nodes. About July 15 she had pain in the region of the upper part of the spine and attacks of "indigestion."

The conditions observed on physical examination were essentially normal.

Determinations of blood chemistry showed: salt, 429.3 mg.; sugar, 106.0 mg., and urea nitrogen, 18.9 mg. The basal metabolic rate was + 1.2 per cent. Urinalysis showed occasional leukocytes. There was an erosion of the cervix.

McCarthy, in "Diseases of the Hair," citing Sabouraud, expressed the opinion that this type of alopecia is extremely rare, as he encountered it only three times in thirty-five years of practice.

Tinea Corporis, with Invasion of Lanugo Hair. Presented by DR. GEORGE M. LEWIS.

E. G., a white boy aged 5 years, is presented from the New York Hospital. Lesions were first noticed a month ago, and they have not responded to the persistent use of various drugs locally. At the time of presentation, after a month's treatment, discrete erythematous lesions are seen on the arms, legs and trunk. Culture revealed Microsporum lanosum. The fluorescence test revealed involvement of many lanugo hairs within the areas of infection.

Dermatitis Venenata Due to Tannins. Presented by DR. GEORGE M. LEWIS.

L. G., a white man aged 30, a chemist by profession, was seen at the New York Hospital after his discharge from the United States Army as a result of an eruption. The patient was observed by Captain H. R. Vogel, M. C., A. U. S., who received the following history:

In the winter of 1942, while serving with the Army of the United States the patient acquired an eruption of the hands and body. The diagnosis of a contact dermatitis was made, but the agent was not determined. He was treated with tannic acid compresses, which resulted in a severe exacerbation and progression of all the lesions. Patch tests with tannic acid elicited positive reactions with dilutions down to a 0.25 per cent aqueous solution. He was advised to stay away from tannins and return to duty. Through the ensuing months he had many minor recurrences, and patch tests were performed with other substances, with the following results: ink, 4 plus; crushed nuts, 1 plus; resorcin, negative; aniline, negative; metol, 3 plus; pyrogallol, 4 plus, and phenol, negative. These tests suggest a sensitivity only to a certain radical grouping in these tannic acid–gallic acid compounds. The patient has tried to eliminate all foods containing tannins from his diet but occasionally he exhibits minor exacerbations on his fingers, arms and back. At present these areas show little activity.

NEW YORK DERMATOLOGICAL SOCIETY

A. BENSON CANNON, M.D., *President*

GEORGE C. ANDREWS, M.D., *Secretary*

Oct. 26, 1943

Pachyonychia Congenita. Presented by DR. GEORGE C. ANDREWS.

Y. S., a man aged 25, of Turkish origin, was recently referred to me by Dr. Udo Wile. The patient has had a disfigurement of the finger nails and toe nails since birth. The nails loosen and fall off if injured in any way. There is no history of any eruption on other parts of the body. No members of his family have a similar condition.

Examination showed great thickening of all finger nails and toe nails, which increased toward the free borders. There was no leukokeratosis of the tongue or follicular keratosis on the glabrous skin, and no bullae were seen on the feet. The teeth were normal. Scrapings from the nails showed no fungi. The serologic reaction of the blood for syphilis was negative. At Dr. Wile's clinic, the basal metabolic rate had been determined, and the patient had been given thyroid extract for four months without any change in the condition.

DISCUSSION

DR. HOWARD FOX: I have presented 2 patients before this society with this rare disease. My patients showed other changes, such as leukoplakia and warty lesions, which were not present in Dr. Andrews' patient. I cannot conceive of help from any treatment except removal of the nails.

Vascular Nevi. Presented by DR. EUGENE F. TRAUB.

F. T., a girl aged 14 months, has lesions which, according to the mother's statement, have been present since birth or shortly thereafter.

The largest nevus is on the left side of the chest and measures about 4 inches (10 cm.) in length and about 2½ inches (6.4 cm.) in breadth. The outlines of this patch are most peculiar, the margins forming an almost perfect rectangle, at once suggesting an artificially produced lesion. The mother maintains, however, that treatment has not been given and states that this is the natural shape of the nevus. The varying shades are most striking, the outer zone being of a bluish slate color with occasional areas where reddish streaks appear while the center is more purplish red. The entire area is peculiarly stippled with what appears to be reticular atrophy, and there seems to be a rather decided loss of fat and subcutaneous tissue in the area.

The other vascular lesions are less striking in appearance, but the majority of them also show the same sort of reticulated stippling with what appears to be atrophy. There are numerous lesions, most of them scattered on the left side of the body and extending down the left arm, including the left hand. The process is not, however, strictly unilateral, as there are a few vascular masses on the right side of the body. The lesion on the left hand conforms in all respects to the type described as nevus flammeus. Most of the other lesions are raised vascular nevi and fit in more with the picture of the so-called angiomas. The lesion on the chest is unique and does not conform to any type of vascular nevus that I have ever seen before or read about in the literature.

DISCUSSION

DR. FRANK C. COMBES: I think these are all vascular nevi and the variations in color may be explained by the depth of vessel involvement. In some areas there is ectasia of the deep venous plexuses. I do not know what to suggest in the way of treatment. Some of the lesions may resolve spontaneously. It is a most extensive and unusual case.

DR. HOWARD FOX: I agree with Dr. Combes. At first glance, some of the lesions on the back looked like mongolian spots, but from close examination I agree that they are all angiomatous lesions.

DR. R. H. RULISON: I have never seen lesions of that color or distribution before. I agree with the diagnosis and believe that the treatment should be conservative.

DR. GEORGE C. ANDREWS: I was particularly interested in this patient because I have a patient with similar lesions who was scheduled to come here today. There are two points about these nevi which in my opinion are most unusual. One is the rather uniform stippling throughout the lesions. The combination of tiny blue spots, about the size of a pinhead, and tiny white spots of similar size gives a stippled appearance. What interested me most was the loss of subcutaneous tissue in the lesion about the neck. The subcutaneous tissue and fat are gone. In my own patient there is also complete loss of subcutaneous tissue beneath the lesion. This is unusual in a patient with a vascular nevus.

DR. A. BENSON CANNON: I should like to ask if a roentgen examination of the chest has been made to determine whether or not there has been any involvement of the larger blood vessels.

DR. EUGENE F. TRAUB: This case was presented today before any investigation was done. Some sections of skin should be taken to see what change is taking place in these lesions. As Dr. Andrews pointed out, the peculiar stippling, or reticulated atrophy as I called it—I do not know which is the better descriptive term for it—is most striking. The peculiar play of color is interesting. It may be due, as Dr. Combes suggested, to variations in depth of the lesions, but I believe it must have some other explanation, because one sees many vascular lesions of varying depth without this peculiar color. Also of interest is the lesion on the chest, which shows apparently a loss of fat and subcutaneous tissue. Roentgenograms of the chest have not yet been made. I shall try to have some made.

DR. HOWARD FOX: One occasionally sees extensive angiomas covered with hypertrophic and keratotic lesions. I see no reason why the opposite change, namely atrophy, should not occur. At least, the appearance of this eruption is most unusual.

DR. FRANK C. COMBES: In connection with Dr. Andrews' remarks, I wonder if there is actual atrophy of the interstitial tissue or whether there has ever been any interstitial tissue present.

DR. GEORGE C. ANDREWS: I was judging from my own case. The lesions were elevated and after a small treatment with radium the lesion has disappeared, with loss of tissue. I attributed this to a panniculitis, possibly resulting from thrombosis and causing loss of subcutaneous tissue in the area.

DR. EUGENE F. TRAUB: I, too, considered the possibility that the changes taking place in the lesion on the chest, which appeared to be the oldest and most advanced, were caused by an attempt on the part of the patient's mother to bring about spontaneous involution, which is usually accompanied by atrophy and other degenerative changes. A high percentage of vascular nevi do disappear spontaneously, most of them with ulceration, atrophy and scarring; but a fair percentage of them do not disappear unless treated, and these persist to adult life.

Moniliasis; Avitaminosis. Presented by DR. GEORGE C. ANDREWS.

R. V., a 5 year old girl, has had an eruption of the face, scalp, mouth and thumbs for six months. The process has become much more intense in the past two months. Because of a sore mouth, the child does not eat as she should.

Examination shows a malnourished, pale, white child. The entire scalp is covered with thick, hard, grayish yellow crusts, which when removed reveal a granulating, freely bleeding base. The eruption on the scalp and nails was diagnosed as favus by several dermatologists prior to receipt of the reports on the cultures and microscopic changes. From two areas copious pus can be expressed. The lower lip is covered with thick cone-shaped crusts on erythematous bases. Similar lesions without crusts are seen on the shoulders and chest. The thumbs show paronychial redness and thick brown nails. The commissures of the mouth are fissured, and the mucous membrane is covered with a grayish white exudate.

Sodium hydroxide preparations from the scales revealed many hyphal threads. Cultures of material from the mouth and of hair, nails and feces yielded Monilia albicans.

DISCUSSION

DR. GEORGE M. LEWIS: The lesions of the buccal mucosa and the perlèche, together with the favus-like involvement of the scalp, are typical of the systemic

type of moniliasis. The prognosis should be reserved with respect to the ultimate outcome. I do not believe there are any specific or satisfactory treatments for this disease, even considering the latest concepts of the importance of vitamin therapy. At times a patient will apparently spontaneously recover.

Dermatitis Venenata Due to Quinacrine Hydrochloride. Presented by DR. GEORGE C. ANDREWS.

J. I., a man aged 42, a chemist working with sulfathiazole and quinacrine hydrochloride, complains of a pruritic eruption on the face, hands, arms and feet of several months' duration. The eruption became acute four weeks ago after a haircut. The patient had a similar eruption several years ago while working with benzene.

Examination shows a poorly demarcated eruption of the face, neck and wrists and the dorsa of the hands and feet. The process on the face is most noticeable adjoining the hair line, where it is deep bluish red. The color does not disappear on compression. There is spotty brownish red pigmentation over the affected areas.

Patch tests were made with sulfathiazole and chemicals used in the production of quinacrine hydrochloride. The results were positive with 1-diethylamino-4-aminopentane, 1-diethylaminopentanone-4 acetone and quinacrine hydrochloride. On control subjects 1-diethylamino-4-aminopentane and 1-diethylaminopentanone-4 proved to be primary irritants. A patch test on the arm with the patient's own hair elicited a positive reaction.

Therapy has consisted of: (1) wearing a hat while at work; (2) washing the hair daily, and (3), since quinacrine hydrochloride is acid in reaction, using a basic protective cream. He has improved except for the back of his neck.

DISCUSSION

DR. GEORGE M. LEWIS: I have had no experience with this eruption, but I believe the diagnosis has been proved.

Dr. R. H. RULISON: Does quinacrine hydrochloride when taken internally ever cause an eruption?

DR. GEORGE C. ANDREWS: Yes, it does cause eruptions when taken internally. The points about this case which interested me were the pigmentation, which resembles somewhat the pigmentation I have seen in fixed eruptions from quinine, and, secondly, the fact that this is connected with the hair. It became worse after a haircut, and it is always better after a shampoo. Of course it is not a fixed eruption. It is a dermatitis with pigmentation. There are thirty-five men working in this plant. All thirty-five have had eruptions, mostly vesicular.

DR. A. BENSON CANNON: I wonder if any one has considered the possibility that this is a case of metallic poisoning? I believe that Tuckerman, of the Mayo Clinic, showed a number of patients with dark macular pigmentation of the face which was due to mercury and lead. I had a patient with a similar eruption that was caused by use of a cosmetic preparation containing lead and mercury.

DR. GEORGE C. ANDREWS: The patient has not been exposed to silver, bismuth or mercury. The fact that he has been better since washing his hair every day and wearing a hat at work is significant. A patch test with the hair showed a strong reaction on the arm. The reaction to a patch test with quinacrine hydrochloride itself was severe.

Pemphigus Vulgaris; Favorable Results of Treatment with Acetarsone. Presented by DR. HOWARD FOX.

L. G., a Jewish merchant aged 47, born in Austria, was a patient of Dr. Morris Axelrod. He had had a fairly hard life but appeared to be in good health until December 1941, when his physician said he had a severe stomatitis, not due to Vincent's organisms. It lasted about two weeks, and he was then well until December 1942, when an eruption appeared on his right heel. This was followed four months later by lesions which involved the mouth, lips, chin, forearms, shins, ankles and soles. When I first saw the patient, the eruption consisted of discrete vesicobullae, mostly arising from normal skin; and from confluence of such lesions there were areas of denudation or of crusting. He had lost about 10 pounds (4.5 Kg.) in weight in the past six months.

The Wassermann reaction of the blood was negative, a blood count and urinalysis gave normal values. Examination of the lesions in the mouth showed no Vincent's organisms. A specimen of blood for the Pels-Macht test was decomposed in transit.

Treatment has consisted of oral administration of acetarsone, according to the method of Oppenheim. Up to the present, he has taken 125 tablets without any ill effects. Improvement began after 30 tablets had been taken and has been progressive up to the present. He has gained 15 pounds (6.8 Kg.), and his general health is now greatly improved. At present there are almost no active lesions, the lower portion of the right leg and the soles showing only crusts. The upper half of the right leg and the forearms now show brownish pigmented areas at the sites of former bullae and crusts. The face and mouth are free of eruption.

Pemphigus Vulgaris; Favorable Results from Treatment with Acetarsone. Presented by DR. HOWARD FOX.

M. F., a 41 year old married Jewess, born in the United States, stated that the husband of her sister had died of pemphigus about twelve years ago. This illness was said to have been of short duration.

About three and one-half years ago, the patient had a severe stomatitis, Vincent's organisms not being found by her physician. It was followed six months later by an eruption on the vertex of the scalp which consisted of "pimples" which discharged and left raw areas, finally becoming covered by crusts. She also has had a rash under the breasts lasting a few weeks. At the outset, the patient was extremely nervous and sleepless and lost 20 pounds (9.1 Kg.) in weight, which she has gradually regained in the past two years.

When I saw her for the first time, nearly two years ago, there was only one pea-sized red painful lesion on the tongue. Since then she has had a few "sores" on the tongue, cheek or gums, which would appear every three or four weeks and last about two weeks. The eruption on the scalp, when seen for the first time, consisted of two coalescing areas of thick adherent crusts, measuring about 3½ by 1½ inches (9 by 4 cm.).

The blood count and the urine were normal, and the Pels-Macht phytopharmacologic test on Jan. 8, 1942 was reported as indicating a 58 per cent toxic effect of the blood, the figure which is thought to indicate pemphigus.

Treatment with acetarsone by mouth, according to the method of Oppenheim, was begun in January 1942 and up to July 19, 1943, she had taken 190 tablets. At the beginning there were ill effects at times from the

medication, which had to be temporarily reduced in amount or stopped. On one occasion she complained of chills, fever, nausea and vomiting, flushing of the face, swelling of the nostrils and eyelids and dryness of the lips.

Steady improvement has resulted since the administration of acetarsone was begun. At present the lesions on the scalp are almost healed. There are no lesions on the glabrous skin and only an occasional sore in the mouth. The patient feels and looks well and strong.

DISCUSSION OF CASES OF PEMPHIGUS

DR. R. H. RULISON: I think there has been an encouraging improvement shown in these 2 cases.

DR. HOWARD FOX: The method of administration of acetarsone was originally suggested by Dr. Oppenheim (ARCH. DERMAT. & SYPH. **47**:40 [Jan.] 1943). The dose is 0.25 Gm., all tablets to be taken one-half hour before breakfast. For the first three days, 1 tablet is taken daily, followed by a rest period of three days. For the next three days, 2 tablets are taken daily, followed by a rest of three days, and on the next day 2 tablets are taken, 3 on the second and 3 on the third day. This is the maximum dose. The procedure is repeated until as a rule 70 tablets have been administered. After a rest period, a further course of such treatment can be given, the drug to be stopped or the dose lowered when it is not well tolerated.

DR. GEORGE C. ANDREWS: I have used this treatment frequently, not only for pemphigus but for other diseases, such as dermatitis herpetiformis. I have never divided the doses as Dr. Fox described but have given the tablets (0.25 Gm.) three times a day for ten days. At the end of ten days if the patient tolerates the drug well I continue it for another ten days. It is often effective. I have seen 1 patient with pemphigus cured completely by it. One must be careful because sometimes there is a severe reaction to the drug. Sudden outbreaks of dermatitis, as in arsphenamine dermatitis, edema and other symptoms may occur. However, I do not see that the divided doses are necessary. There may be some reason for them, but it seems to me that if a patient tolerates the drug he is likely to tolerate it up to a maximum dose. Some patients tolerate it like water. Others have vomiting and diarrhea after taking 1 or 2 tablets and are very sick from it.

DR. A. BENSON CANNON: The results have been so good in the treatment of the 2 cases of pemphigus that a diagnosis is impossible at this time. The patients do not have any lesions characteristic of pemphigus, and both appear unusually well physically. I have used this drug for a great many years in the treatment of a variety of dermatoses when I thought arsenic was indicated because it has been less toxic than other forms of arsenic administered by mouth. Arsenic has been used in the treatment of pemphigus for a number of years, and it is still considered by some dermatologists as the drug of choice. I have never thought that this particular preparation has any advantage over any other form of arsenic.

Lymphocytoma of the Nose. Presented by DR. GEORGE M. MACKEE.

E. D., an Italian man aged 61, registered at the New York Skin and Cancer Hospital on July 29, 1943, complaining of lesions on the nose. They were slightly pruritic. His general good health has been unaffected. In 1906 he had had pneumonia.

A pinhead-sized lesion appeared on the nose five years ago. A second appeared a year later, and a third, two years later. The remaining growths developed within the last two years. One lesion ruptured a year ago, with a serosanguinous exudation.

On the tip of the nose are located six papulovesicles. They are flesh colored with a faintly bluish tinge and vary in size from that of a pinhead to that of a split pea. The larger papules are fused at the bases, exposing the rounded, smooth and nonscaly tops. They are painless and not tender. They are easily compressible with a diascopic glass and reveal a uniform faintly yellowish color. On puncture of a papulovesicle, a bloody fluid appears but the contour of the lesion is maintained. There is a scar as a result of the removal of a biopsy specimen.

The Wassermann and Kahn reactions were negative, and the urine was normal. The hemogram showed a relative lymphocytosis. There were 3,610,000 erythrocytes, 6,500 leukocytes (43 per cent polymorphonuclear neutrophils and 53 per cent lymphocytes) per cubic millimeter.

From the histologic section examined by Dr. Charles F. Sims the diagnosis of lymphocytoma was made. The description was as follows: The epidermis was somewhat thinned. The rete pegs and their corresponding papillary bodies were for the most part absent. This was most conspicuous in that portion of the section overlying a fairly well circumscribed oval cellular infiltration, of which there were two in the section. Between this cellular mass and the epidermis was a narrow zone of connective tissue. The cellular mass extended from the subpapillary zone to about the middle of the corium. In one of the many serial sections that were made the cellular mass appeared to surround a follicle. In another section an epithelial cyst filled with horn and sebaceous material was noted. In further serial sections this cystic mass was shown to extend to the surface. The cells comprising the cellular mass were lymphocytes which varied somewhat in size, some presenting pyknotic nuclei whereas others revealed a distinct intranuclear network of chromatin and one or two nucleoli. The cytoplasm of most of these cells was indistinct. In some of the serial sections an occasional giant cell was noted. Scattered throughout the cellular mass were a few capillaries. Surrounding the entire mass, the connective tissue appeared denser than the rest of the corium. Some basophilic degeneration could be noted in the upper part of the corium. No germinal centers were seen.

DISCUSSION

DR. EUGENE F. TRAUB: The lesion at the site of removal of the biopsy specimen appears to have been destroyed thoroughly; hence the depth of the process cannot be great. Irradiation alone (roentgen rays or radium) may cure the rest of the growth, but should it fail electrodesiccation or electrodesiccation combined with irradiation will certainly destroy the lesions, with a good cosmetic result.

DR. GEORGE C. ANDREWS: My colleagues and I treated at least 2 patients with solitary lymphocytoma at the Vanderbilt Clinic with roentgen rays, and they responded well to filtered rays in semi-intensive doses (½ erythema dose). I suggest the use of roentgen rays, presuming that this is a solitary lymphocytoma, which it may be. However, the blood count shows an elevation of lymphocytes (53 per cent). That is rather high, and there is a possibility that this is early lymphatic leukemia. That should be kept in mind and the case followed for a period. More blood counts should be done before it is concluded that this is a solitary lymphocytoma.

Neural Leprosy (Maculoanesthetic Type): Demonstration of Histamine Test. Presented by DR. HOWARD FOX.

Mrs. B. E., a white woman aged 40, was born in the United States, but she lived in the Philippine Islands, where her husband was in business, for five years beginning in March 1936. The following year was spent in Hawaii. Since then she has been in the United States. While in Manila, she suffered from a swelling of the right foot, which prevented her from wearing shoes but which partly subsided when the leg was elevated. The swelling disappeared when she left the Philippines, and since then she has suffered from pain and great tenderness in the right great toe and the inner border of the adjacent toe (distribution of the anterior tibial nerve).

About a year ago she suffered from "sores" on the left arm, which did not heal for eight months. They were in the center of a circinate lesion of the size of a silver dollar. About six months ago the circinate lesion began to spread, and at present it involves the lower two thirds of the outer aspect of the left arm. Other ringed lesions have appeared lately, many in the last two weeks. They vary from the size of a pea to that of a large coin and are irregularly scattered over the forearms, lower part of the back, breast, abdomen and knees. They have narrow, salmon-colored borders and flesh-colored centers. The central parts of the rings show absence of sensations of temperature, pain and touch. There are no sensory or other changes in the hands and no appreciable enlargement of the superficial nerves, characteristic of leprosy. The patient is in good general health.

A satisfactory demonstration of the histamine test was made, 0.05 cc. of a solution of histamine phosphate being injected intradermally into both normal skin and anesthetic areas. In normal skin a wheal surrounded by erythema (normal reaction) was produced, whereas in the anesthetic areas the wheal without a surrounding erythema appeared.

DISCUSSION

DR. J. GARDNER HOPKINS: The histamine test is new to me.

DR. HOWARD FOX: The article by Pardo-Castello and Tiant recently appeared in print (ARCH. DERMAT. & SYPH. **47**:826 [June] 1943).

DR. J. GARDNER HOPKINS: The absence of the flare is what one might expect in this disease, because the flare about the wheal is believed to be an axon reflex produced by a stimulus from the center of the wheal up and down the nerve to the peripheral vessels and not to direct action of the histamine. If the nerves are destroyed, this axon reflex does not take place, as demonstrated in this case.

DR. MAURICE J. COSTELLO (by invitation): The wheal reaction with the flare is the usual reaction in normal persons. The failure to produce the flare is characteristic of the anesthetic area in lesions of leprosy. Dr. Fox's demonstration of this test impressed me.

DR. HOWARD FOX: The reflex is absent in the areas where the sensory nerves are damaged.

Lymphoblastoma (Mycosis Fungoides?). Presented by DR. EUGENE F. TRAUB.

A. K., a Jewish man aged 56, was admitted to the New York Skin and Cancer Hospital with a provisional diagnosis of generalized dermatitis. On Aug. 25, 1943, he was hospitalized in the New York Post-Graduate Medical School and Hospital. Nine years ago the patient noted a pruritic dermatitis of the pretibial surface of the right leg which slowly but progressively enlarged to the present size of 12 by 25 cm. One year ago, the patient states, he had "athlete's foot," and after three months lesions broke out on the forearms and hands. He was hospitalized for ten days at King's County Hospital and improved moderately. He was well until April 1943, when an eruption developed on the arms and feet. This rapidly became generalized, and he was readmitted to Kings County Hospital for ten days. He received four roentgen treatments on the feet and hands and was discharged as improved. Twelve days after his return home the eruption recurred, and he consulted a dermatologist. Since then he has had repeated remissions and exacerbations. The patient has had asthma, and a son of his suffers from hay fever. He has been taking an unknown medicine for the asthma for several months.

The general physical examination revealed essentially normal conditions, with the exception of enlarged inguinal and epitrochlear lymph nodes and wheezing rales in both lungs.

There was a bluish red, sharply circumscribed plaque measuring 12 by 25 cm. on the pretibial surface of the right leg, composed of pea-sized papules which were distinct at the periphery and lost their identity in the center of the plaque. The entire skin, except of the palms and soles, was diffusely involved with an eruption of erythematous, bluish, pinhead-sized to pea-sized papules which were covered with a fine powdery scale, more pronounced on the extensor surfaces of the upper and lower extremities. At various times during his stay in the hospital diffuse erythematous scaly papular eruptions simulating pityriasis rosea appeared, disappearing in about five to seven days. At other times there appeared on the extensor surfaces of the legs, thighs, chest, face and scalp, deep subcutaneous nodules which were well demarcated and not tender. These varied in size from that of a walnut to that of a hen's egg. They disappeared spontaneously without leaving any trace in from three to fourteen days. A specimen for biopsy was taken from one of these nodules.

The patient has been treated with mentholated solution of aluminum acetate and generalized roentgen irradiation and since September 21 he has received generalized roentgen irradiation (¼ skin unit unfiltered), a third of the body being treated every other day. Up to the present time he has had five complete generalized treatments. The eruption is at present definitely improved. During the past month no more new cutaneous lesions or nodules have appeared. The itching is almost gone, and the plaque on the right leg is now 9 by 13 cm. in size.

A medical consultation on September 13 showed no pathologic changes. Urologic consultation on September 20 showed hypertrophy of the prostate. Transurethral resection of the hypertrophic gland was suggested. No foci of infection were found. Dental consultation on September 13 showed possible focal infection in the apex of one upper tooth. Examination of the nose and throat revealed no foci of infection.

Roentgen examination of the chest on August 30 showed chronic bronchitis. Studies of the bone marrow in September showed nothing abnormal in the number and structure of the cells. Six urinalyses from August 26 to September 30 revealed no abnormal amounts of protein, sugar or acetone. In eight complete hemograms from August 26 to October 11 the erythrocytes varied from 4,500,000 to 3,440,000, leukocytes from 8,100 to 5,050, neutrophils from 70 to 52 per cent, eosinophils

from 6 to 2 per cent, lymphocytes from 30 to 19 per cent and monocytes from 23 to 2 per cent. Chemical studies of the blood on August 26 showed 14.5 mg. of urea, 30 mg. of nonprotein nitrogen, 48 mg. urea nitrogen and nonprotein nitrogen, 90 mg. of dextrose and 295 mg. of cholesterol per hundred cubic centimeters.

Histologic examination of a plaque of violaceous pea-sized papules showed an acanthotic epidermis with a laminated parakeratotic scale. The rete pegs were long and were occasionally fused. The prickle cells showed numerous perinuclear spaces as well as some intracellular edema. The granular layer was practically nonexistent. The corium was filled with round cells separated by edematous collagen fibers and pools of exudate. Some of the blood vessels in the papillary bodies were engorged. The gentian violet (methylrosaniline) stain did not reveal amyloid. Deeper sections showed an exudate consisting largely of plasma cells. There were occasional fragmented nuclei and eosinophils. The collagen fibers showed a granular degeneration and fragmentation, especially in the areas of the cellular exudate. There was more than a moderate edema in the papillary bodies, and there were small areas of edema in the epidermis. The microscopic diagnosis was lymphoblastoma.

Histologic examination of one of the transitory, firm, discrete, subcutaneous nodules showed the following changes: The epidermis was slightly acanthotic. There was a slight amount of perivascular infiltration about the blood vessels in the upper part of the corium associated with a slight amount of edema. The cellular exudate was of the round cell type. The nodule in the deep fat section showed a pale-staining cellular exudate. The exudate was diffuse as well as in nodules. This cellular exudate consisted of epithelial cells and round cells. The microscopic diagnosis was lymphoblastoma.

DISCUSSION

DR. EUGENE F. TRAUB: The patient is presented because of the peculiar syndrome and the histologic diagnosis of lymphoblastoma which some of the lesions also suggest clinically. Does every one agree with this diagnosis?

DR. GEORGE C. ANDREWS: I could not see any evidence of lymphoblastoma in the slide made from the lesion on the leg. Did Dr. Traub think that the slide showed lymphoblastoma?

DR. EUGENE F. TRAUB: The histologic diagnosis was made by Dr. Else Barthel and, I believe, concurred in by Dr. Wilbert Sachs. Sections were taken from the peculiar thickened and fixed eruption on the lower part of the leg as well as from the peculiar evanescent nodules and from various areas of skin. The patient has a history of asthma and has had an eczematous type of eruption for years. It is a well known fact that the prefungoid eruption of mycosis fungoides is frequently eczematous.

Hereditary Hemorrhagic Telangiectasia. Presented by DR. FRANK C. COMBES.

C. F., a man aged 75, gave a history of frequent nosebleeds, associated with the appearance of red streaks and puncta on the face and oral mucosa about puberty or shortly after. The nosebleeds have been particularly severe for the past twelve years.

On examination the patient shows hundreds of telangiectases over his face and his nasal and oral mucosae. One lesion on his forehead pulsates. The patient's father was a "bleeder."

The physical examination revealed otherwise normal conditions; the spleen and liver were not enlarged. There was a faint systolic murmur over the precordium.

Urinalysis gave normal results, and the Kahn reaction of the blood was negative. Cytologic examination of the blood showed a fairly severe secondary anemia, with a hemoglobin content of 58 per cent. The platelet count, coagulation time and fragility of erythrocytes were normal, although the prothrombin time was only 65 per cent (normal is over 70 per cent).

DISCUSSION

DR. EUGENE F. TRAUB: Severe forms of this disease are rare, whereas mild forms are encountered fairly frequently. This would be termed moderately severe. Dr. Charles Mallory Williams and I questioned all clinic patients with telangiectatic vessels, spider nevi and similar lesions as to a family history of such lesions and also questioned them about bleeding from the nose or elsewhere. In a short time we collected over 100 cases. Not all the patients, however, gave a similar history; some simply mentioned that other members of the family had telangiectatic spots, while others stated that telangiectatic spots were not present but nosebleeds, subcutaneous hemorrhages and other types of bleeding did occur. The severe forms, with dangerous internal hemorrhages, severe secondary anemia and many large telangiectatic vessels or angiomas, are rare. The treatment of the local vessels by some destructive method, such as cautery puncture, will frequently stop much bleeding.

DR. HOWARD FOX: Ever since Dr. Williams and Dr. Traub published their article about this disease, I have questioned my patients with a spider nevus as to a history of nosebleeds and have found few who had had them.

DR. MAURICE J. COSTELLO (by invitation): I, too, have asked patients about a history of epistaxes, but my experience has been different from Dr. Fox's in this regard. One may not get a history of nosebleeds for patients with spider nevi, but such a history will be obtained regarding other members of the family.

DR. HOWARD FOX: I have also failed to get a family history of the disease, as a rule.

DR. EUGENE F. TRAUB: One has to be rather careful in attempting to obtain a history in such cases, because if one just inquires whether other members of the family are similarly affected the answer is apt to be no. But if one inquires as to whether other members of the family have broken blood vessels or little vascular tumors on the skin or whether members of the family have bleeding from the nose, one can usually get a fairly straightforward history.

DR. FRANK C. COMBES: I agree; but the question in my mind is: What constitutes a sufficient number of such nevi to warrant a diagnosis of Osler's disease? If one considers a few spider nevi and a history of familial epistaxis sufficient, then the disease is fairly common. I do not think this is true. Most patients with a mild form of Osler's disease have telangiectases under the tongue. I have not observed this in persons who have spider nevi, but I have always encountered it in persons with Osler's disease. This man has a severe type, beginning at puberty and getting progressively worse, although he still appears hale and hearty.

Lymphatic Leukemia with Bullous Lesions. Presented by DR. GEORGE M. MACKEE.

J. B., a man aged 68, referred by Dr. Charles K. Good, registered at the New York Skin and Cancer

Hospital on Sept. 7, 1943, presenting lesions of five months' duration. There were no subjective symptoms. He has had chronic progressive muscular atrophy of the right and left upper extremities for the past fifteen and eight years, respectively. He was treated for leukemia by a private physician for four months just prior to his admission to the clinic. The diagnosis apparently was made on the clinical finding of generalized enlargement of lymph nodes, as laboratory examinations were not made. He was treated with eleven intravenous injections of some unidentified substance and with a total of thirty-three roentgen treatments, which were given to various affected lymph nodes of the body every other day. The lymph nodes responded readily to the irradiation. Bullae appeared first on both feet and then gradually on the arms and the head. These bullae would stay for about four weeks and would then dry up.

On the day of his admission to the hospital the patient had generalized pea-sized to bean-sized bullae with fairly firm walls. They were distended and contained clear fluid.

On October 18, the patient presented symmetric, crusted and vesicular lesions with inflammatory bases, mostly on the extensor surfaces and sides of the upper and lower extremities. The trunk was comparatively free of lesions except for a few on the back. The buccal mucosa was not affected. Both ankles were edematous. The lymph nodes in the groins and axillas were not appreciably enlarged. The liver was enlarged to the level of the umbilicus. The spleen was not palpable.

The Wassermann and Kahn reactions were negative, and the urine was normal. The hemogram showed 63 per cent hemoglobin, 3,570,000 erythrocytes and 64,000 leukocytes per cubic millimeter. The differential count was normal except for 7 per cent eosinophils and 10 per cent monocytes. The platelet count was 160,000. The bleeding and coagulation times were normal. Examination of the content of a bulla showed clear fluid but no cells.

Two sections, one from a bullous and the other from a nonbullous lesion, were examined by Dr. Charles F. Sims and diagnosed as lymphatic leukemia with bullous lesions. The description was as follows: The epidermis revealed at many points spongiosis and vesicle formation. At one point there was a large subepidermic bulla filled with a pink-staining substance and a few scattered cells. The basal margin was pigmented throughout. Throughout the upper, middle and deep portions of the corium and extending into the fat septums was a diffuse cellular infiltration composed for the most part of cells about the size of an ordinary lymphocyte. In addition, there were numerous small round cells, wandering connective tissue cells and some polymorphonuclear neutrophils. The vessels were dilated and congested. Fragmentation of the collagenous framework was present to a pronounced degree in the upper part of the corium. Interstitial and parenchymatous edema of the collagen bundles in the upper, middle and deep parts of the corium were noted.

DISCUSSION

DR. J. GARDNER HOPKINS: These almost varicelliform lesions which the patient showed and the bullous lesions are, I am sure, described in lymphatic leukemia. I recall 1 patient in the terminal stages of lymphatic leukemia for whom the diagnosis of varicella was entertained because the eruption was so characteristic. I think those lesions point to the diagnosis of lymphatic leukemia.

DR. HOWARD FOX: I think this should be considered a case of true leukemia cutis rather than a toxic manifestation of leukemia, the so-called leukemid.

DR. MAURICE J. COSTELLO (by invitation): I agree with Dr. Fox. I think some of those lesions represent true leukemic infiltration of the skin.

DR. EUGENE F. TRAUB: Dr. Fox has suggested the point I was about to make, namely the question whether these lesions are leukemids or whether they represent a bullous leukemia cutis. The members may recall the case of the woman with many bullous lesions presented before this society. At least three or four of the lesions were excised and examined microscopically, and all showed a true leukemia of the skin. In that case the blood picture was that of a true leukemia, with a white cell count at various times above 30,000 and a high percentage of lymphocytes, but in the case of Dr. MacKee's patient the blood picture was practically normal. It is possible, for this reason, that the microscopic picture might be different and not show a true leukemia until such a time as actual changes in the blood have taken place.

Tinea Barbae and Tinea Corporis Due to Microsporum Lanosum. Presented by DR. GEORGE M. LEWIS.

L. I., a man aged 48, is presented from the New York Hospital. He first noticed a lesion on his body three months ago, followed by a gradual spread to other areas on the trunk and finally to the bearded region. He states that his daughter had a ringed lesion on her body. He had contact with a cat in the grocery where he works.

On examination there were many small follicular pustules on the bearded region, together with rather typical erythematous lesions with clearing centers on the trunk.

The filtered ultraviolet ray test revealed many fluorescent hairs scattered over the bearded region. Cultures of the hairs revealed Microsporum lanosum.

DISCUSSION

DR. J. GARDNER HOPKINS: I do not recall having seen before a M. lanosum infection of the beard. I think it is probably rare.

DR. R. H. RULISON: This was a beautiful demonstration.

DR. MAURICE J. COSTELLO (by invitation): Since the epidemic of tinea capitis has been present in this city there have been observed children with discoid solid lesions on the skin which on examination with the Wood light have shown hairs that fluoresce. I think that Dr. Lewis showed a child with such lesions at the Academy of Medicine a few weeks ago. I presented a similar child at the October meeting of the Manhattan Dermatologic Society.

DR. EUGENE F. TRAUB: In this connection I think it interesting to mention that about four weeks ago a kitten was brought into the clinic, which under direct light appeared fairly normal. On examination under the Wood light, many infected hairs, especially about the nose, were seen. The kitten was handled by the technician in the laboratory and by a member of the postgraduate student class. Since that time the technician who handled the kitten and one of the students have acquired a microsporum infection on the hands, the diagnosis of which has been substantiated microscopically.

DR. GEORGE M. LEWIS: One of the points of interest to me in this case was the absence of involvement of

the scalp, demonstrating, or at least suggesting, the relative immunity of this part of his body in comparison with the known susceptibility of the child's scalp to this infection. It is inconceivable that there has not been an opportunity for his scalp to become infected. Another point I should like to bring to the attention of the society is that the Wood light is not a reliable method for ruling out a fungous infection in the bearded region, because the hairs infected with Trichophyton gypseum and with Trichophyton purpureum do not fluoresce, and they are much more common infective organisms than M. lanosum. This is the first instance of tinea barbae due to this species that I have seen.

LOS ANGELES DERMATOLOGICAL SOCIETY

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Nov. 9, 1943

Psoriasis Limited to Palms and Soles. Presented by DR. ANKER K. JENSEN.

K. T., a woman aged 43, has noticed hard "pimples" on the soles and scaling hard patches on the palms. The general physical condition is good. Discrete papular dime-sized lesions with coarse thick scales are present on the soles. The lesions on the palms are less thick and are not well defined. Fissures are present in many of these palmar and plantar lesions. There is no erythema of the lesions. The Wassermann test elicited a negative reaction.

DISCUSSION

DR. H. P. JACOBSON: I think this is a case of keratoderma climactericum. I did not see any features definitely characteristic of psoriasis. On the other hand, the appearance of the lesions, the age of the patient, the recent history and the associated symptoms are all suggestive of keratoderma climactericum.

DR. SAMUEL AYRES JR.: I am rather inclined to agree with Dr. Jacobson that it is more suggestive to me of keratoderma climactericum. I do not think psoriasis can be entirely ruled out. The palmar lesions do not look like psoriasis but the ones on the feet do. The absence of any other psoriatic lesions would favor the diagnosis of keratoderma.

DR. A. FLETCHER HALL: I agree with Dr. Jacobson's remarks. Particularly is this true when the patch of neurodermatitis on the right side of her neck is considered. One might expect such a neurodermatitis along with a climacteric syndrome more than with psoriasis.

DR. ANKER JENSEN: I discovered no other signs of the climacteric in this case except the lesions of palms and soles, if truly they are to be explained on that basis.

A Case for Diagnosis (Contact Dermatitis? Psoriasis?). Presented by DR. A. FLETCHER HALL.

A. M. X., a man aged 36, recently had been a garage mechanic but he was an aircraft worker at the time of the onset of this eruption. In December 1942, while he was working on model planes to be used in wind tunnels at the aircraft plant, an erythematosquamous patch developed on the flexor-ulnar aspect of his right wrist. At that time he was working with duralumin, steel, wood and lacquer. He was told that he was sensitive to zinc chromate primer and that he should quit the aircraft industry. It is not clear that he had any contact with zinc chromate primer at the time of the appearance of the eruption. He quit aircraft work in January 1943, and within a few weeks started work as a garage mechanic. In July I saw him for the first time. Then he showed scattered erythematosquamous plaques involving the hands and wrists. He was told to contact his employers' insurance carrier, but he was not seen again until about two weeks ago, when he stopped work altogether. All aspects of his hands and wrists show discrete and confluent nummular eczematous plaques. Although they are still inflamed, the acuteness of the process has subsided somewhat during the past two weeks without treatment. The eruption appears to be worse than when seen last July. A biopsy preparation for the microscope is presented with the patient. Recent treatment has been boric acid compresses and cholesterolized calamine lotion.

DISCUSSION

DR. CHRIS HALLORAN: The eruption began three or four years ago, at which time the patient was doing an entirely different kind of work than at present. The lesions predominate on the hands and are coin shaped. I should classify this dermatitis as a nummular eczema.

DR. H. P. JACOBSON: I agree with the diagnosis of nummular eczema. In addition to this, the patient appears to have a rather extensive contact dermatitis. The history of the case appears to indicate that this contact dermatitis was caused by some topical applications.

DR. SAMUEL AYRES JR.: I think it is a contact dermatitis. Sometimes they take circinate forms. Pruritus hiemalis on the shins not infrequently takes a circular form. This man did some work in an airplane factory. He did not take time off from work and soon went to work as an antomobile mechanic. He gets his hands covered with grease, then uses mechanics' soap. It seems to me this combination is enough to keep the eruption stirred up. I think that if he quits work, lets his hands rest and uses bland applications he will improve.

DR. H. C. L. LINDSAY: It looks like a neurodermatitis to me.

DR. M. E. OBERMAYER: I did not see the patient, but if nummular eczema (or exudative neurodermatitis, as I prefer to call it) is considered in diagnosis it should be realized that this is characterized by definite clinical signs by which it can be differentiated from other dermatoses. The lesions of exudative neurodermatitis are never annular but present sharply dermarcated plaques of which the total surface is involved in the inflammatory process with no appreciable difference in intensity between center and border. No intact vesicles are ever seen on their surfaces; if vesicles are present, nummular eczema can be ruled out safely. Furthermore, if it is assumed that the eruption was originally caused by hypersensitivity to zinc chromate, a positive reaction to a patch test with this substance may be expected. If by testing a strongly positive vesicular reaction is produced, this will practically eliminate the diagnosis of nummular eczema, as evidence of epidermal hypersensitivity is only exceptionally—if ever—encountered in this disease.

DR. NELSON PAUL ANDERSON: I do not know what to call this eruption. Histologic examination favors the diagnosis of psoriasis.

DR. L. F. X. WILHELM: I agree with Dr. Ayres' remarks; I think it is a contact eczema of industrial origin.

DR. A. FLETCHER HALL: One of the features of this case which prompted me to present it is that brought up by Dr. Ayres, the resemblance to contact dermatitis. The appearance of the lesions is almost characteristic of the type of contact dermatitis observed from zinc chromate, the anticorrosive which is used in the priming coat covering the surfaces of airplanes during manufacture. The fact that the patient worked in an airplane factory when the first lesion appeared has led to the assumption that it was contact dermatitis from zinc chromate. The history states that he was sensitive to zinc chromate, but he was not in contact with this substance at the time of onset of the dermatitis. But even if he had acquired sensitivity by contact with other chromates, which is possible, the long period of absence from that contact, regardless of whether or not the dermatitis was kept up by other external contacts, would have been sufficient for the dermatitis to lose its characteristics. Many such eruptions are seen, and none of them keep the characteristics of a zinc chromate dermatitis after the subjects is out of contact with that substance for a month or more. I cannot believe this was due to one contact and kept up by other contacts. The microscopic picture strongly suggests psoriasis to me, but it is difficult to think of psoriasis limited to these areas with absolutely no signs elsewhere.

Lichen Planus Involving the Finger Nails. Presented by DR. SAMUEL AYRES JR.

W. G., a man aged 40, presents deformities of all finger nails, except the second and third, which show peculiar and identical abnormalities. This deformity consists of a median longitudinal ridge which is somewhat reddened and rather soft and appears to be continuous with the skin at the base of the nail. This ridge appears to divide the harder nail substance on either side like a ship's prow cleaving the water. The rest of the nail tissue shows longitudinal ridging and some loss of luster. Some of the nails show slight redness with a somewhat shiny appearance of the skin at the base of the nails. The left fifth finger nail appears to be practically destroyed, with absence of cuticle at the base of the nail. Typical lesions of lichen planus are present in the buccal mucosa on each side opposite the molars, where there is a white reticulated appearance. There are several typical flat shiny violaceous papules on the glans and shaft of the penis and a group of slightly hypertrophic violaceous papules on the medial aspect of the right ankle. The toe nails do not appear to be affected. The scalp shows seborrheal scaling. The changes in the nails have been present for two years.

The patient has had lichen planus at intervals for the past fourteen years. Previous treatment has consisted of six roentgen treatments to the finger nails seventeen months ago and injections of mercury salicylarsenate at intervals until two years ago. He has received intravenous injections of calcium and vitamins by mouth. He is sensitive to barbiturates. These drugs cause a bullous eruption to develop. He had rheumatic fever with chorea in 1926 and has had an appendectomy.

Microscopic examination of scrapings from the feet reveal fungi.

DISCUSSION

DR. ANKER JENSEN: I did not know that lichen planus could cause such a dystrophy of nails.

DR. H. C. L. LINDSAY: I agree with the diagnosis of lichen planus. The pitting of the nails in lichen planus and syphilis may look much like that seen in psoriasis, too. Longitudinal ridging of finger nails in lichen planus is rare.

DR. A. FLETCHER HALL: One wonders if the roentgen therapy to the nails had anything to do with their present appearance.

DR. W. H. GOECKERMAN: I have seen a fair number of persons with lichen planus of the nails, but I have never seen anything akin to this produced by that condition.

DR. SAMUEL AYRES JR.: In going through our files, I found a photograph from another case of lichen planus of the nails exactly like this. As far as I know, those are the only 2 cases I have encountered with that characteristic picture. I have not taken a section. I think changes of the nails of that sort are not common.

Keloids (Unhealed). Presented by DR. SAMUEL AYRES JR.

M. W., a woman aged 19, a stenographer, sustained an injury to the right arm sixteen years ago, at the age of 3 years. A thickened keloid formed about six years ago. For no apparent reason there developed a fissure running its full length which has never healed. It is located on the extensor aspect of the right arm above the elbow and is approximately 15 cm. long. The entire scar was removed surgically two years ago, but keloid tissue formed again and the unhealed median fissure persisted. At the site of an appendectomy two years ago a similar keloid developed, and in this also has developed a median fissure which has persisted. The patient has had an undetermined amount of roentgen treatment to both lesions without apparent benefit. She eats erratically; she consumes a large quantity of salt, eats almost no vegetables, eats some fruit and drinks many coca-colas and considerable coffee. Since the appendectomy two years ago she has been troubled with nausea and vomiting at least once a day.

DISCUSSION

DR. CHRIS HALLORAN: I believe this to be a dermatitis factitia. The lesions are keloidal, but in the center of each is a linear incision that has apparently been produced by a knife or some other sharp instrument. The incision in each of the keloids does not extend to the tip of the scar tissue. The keloid of the elbow has been present since the age of 3, but it did not "open" until after the keloid of the appendical scar developed, which was after puberty.

DR. L. F. X. WILHELM: I thought the patient was rather proud to exhibit the keloids.

DR. H. P. JACOBSON: I am in accord with the views expressed, that the fissured lesions bisecting the keloids are probably factitial. Undoubedly there is some psychogenic factor present in this patient which is partially responsible for the presented cutaneous lesions. I do not believe that this accounts for the entire picture. The patient stated that all her complaints and troubles had their origin about two years ago after an appendectomy. Her periods are irregular and scanty. She has a tender abdomen, especially in the right lower quadrant. She has morning nausea and vomits at least half the food she consumes daily. A feature worth mentioning which I observed while examining her is a circumcorneal injection. This young woman is certainly not well. Probably she has some organic abdominal

trouble. She shows some evidence of avitaminosis. I believe she is entitled to further physical examination.

DR. A. FLETCHER HALL: I think that the factitial element is particularly interesting because of the beautiful freudian symbolism she has created by her factitial efforts. She has simulated a vulva on each keloid just as nearly as one possibly can. I think her vomiting is on the same basis.

DR. ANKER JENSEN: I believe this patient should receive psychotherapy.

DR. SAMUEL AYRES JR.: I am inclined to agree with the suggestions as to the factitious features of these fissures, but I am not altogether convinced that that is the whole story. There is a disturbance in her psychic background, perhaps. The vomiting may be associated with that, or there may be some adhesions following the appendectomy which give rise to abdominal tenderness and vomiting. She eats a peculiar diet, consisting of much salt and almost no fruits or vegetables. I prescribed a diet of the Gerson type two weeks ago, with restricted salt, protein and carbohydrates and an abundance of fruits and vegetables.

Rothmund's Syndrome. Presented by DR. NELSON PAUL ANDERSON.

A. B., a man aged 56, is an Italian machinist. He is presented because his case shows several of the criteria necessary for the diagnosis of Werner's syndrome or Rothmund's syndrome. The criteria which are present and well developed are premature graying of the hair, premature baldness, scleropoikilodermatous cutaneous changes, endocrine stigmatization and a characteristic physical habitus. The only one lacking in this case is precocious cataracts. Other conditions which sometimes occur, but which have not been discovered or are absent, include evidence of disturbed calcium and carbohydrate metabolism (hypoglycemia, diabetes mellitus), osteoporosis, metastatic calcification, hypogonadism and trophic ulcers. This is apparently the fourth case of this disease to be recognized in the United States and the first to be presented before a dermatologic society.

DISCUSSION

DR. CHRIS HALLORAN: In this case I should make a diagnosis of pemphigus foliaceus. From time to time one finds in the literature a description of a disease the like of which has supposedly been unobserved before. All physicians know that occasionally any disease in the early stage may present unusual characteristics. Overenthusiasm over cases, with too early reporting—before the more salient and diagnostic characteristics become manifest—occasionally results in reporting of a supposedly new disease, with resultant confusion in nomenclature. In my opinion, this in time will prove to be a case of pemphigus foliaceus.

DR. SAMUEL AYRES JR.: Dr. Anderson has the advantage of the rest of us because he has made a special study of this disease. One or two points raised a question in my mind. I understand the patient has had what appears to be alopecia areata. He says that his hair turned white and came out in spots. Apparently it came out and grew back in again. As for the rest of the picture, the acute dermatitis is of recent origin. The patient said that his face was stretched and glossy and he felt tense all around his face and scalp before the present dermatitis. Could the whole picture possibly be a dermatomyositis? At the present time he has no weakness in his grasp, but a swelling of the face and peculiar cutaneous changes suggest the possibility that over a period of time muscular changes may develop. It is a most interesting case.

DR. NELSON PAUL ANDERSON: When I first saw the patient, I did not have the slightest idea of a diagnosis. However, I realized that I did not know what the disease was, and I wanted to find out. I believe I have. About 1941, Oppenheimer, of New York, published an article entitled "Werner's Syndrome" (Oppenheimer, B. S.: *Am. J. M. Sc.* 202-629 [Nov.] 1941). I think this is a misnomer, because it was taken from Werner's thesis which first described cataracts occurring in association with scleroderma. In this article Dr. Oppenheimer presented 3 clinical pictures of 3 different men who had what he called Werner's syndrome. These pictures are nearly identical with that of the man I presented tonight. There are many conditions which are similar in all these cases. The first is premature graying of the hair. Secondly, there is a loss of hair much like alopecia but ending with only a fringe of hair. Vitiligo is frequently present, as in my patient. Also in many instances there are ocular changes, especially cataracts. Finally, there are cutaneous changes which Dr. Oppenheimer describes as scleropoikilodermatous. The condition of this man's skin changes rapidly. Tonight it is inflammatory. Sometimes it presents a reticulated atrophic wrinkling. Aside from this group of cases there is another group associated with gray hair, premature alopecia, bilateral ocular changes, eighth nerve deafness and Fröhlich's syndrome. I believe this man's case falls in one or the other category. Biopsy certainly suggests certain poikilodermatous changes. There is nothing to suggest any pemphigoid changes. I believe, then, that one has here a definite syndrome, extremely rare, which involves the whole ectodermal system. I think the outlook for improvement in this case probably is poor. I am sure that if one would look at any of Oppenheimer's pictures, one would note the striking resemblance to the patient whom I have presented.

Familial Hereditary Pemphigus. Presented by DR. PAUL D. FOSTER.

B. M., a woman aged 42 (previously presented on April 13, 1943), presents violaceous, erythematous, confluent papular patches, dime-sized to half-dollar-sized lesions with a circinate border, involving the upper part of the chest and the right shoulder. Much of it is dry and scaly. There is considerable local pruritus. Tests of the urine, determinations of the blood sugar, blood count and gastric analysis all gave results within normal limits. The Wassermann test elicited a negative reaction. A slide accompanies the report. Treatment has included arsenous acid (asiatic) pills, fractional dose of roentgen rays and bismuth sodium paraaminophenyl arsonate (arseno-bismulak) (2 cc.) given weekly.

DISCUSSION

DR. A. FLETCHER HALL: I suggest the diagnosis of lupus erythematosus.

DR. ANKER JENSEN: I agree with Dr. Hall.

DR. H. C. L. LINDSAY: The lesions simulate lupus erythematosus.

DR. SAMUEL AYRES JR.: I thought it was lupus erythematosus. Some lesions on the back of the neck show atrophic changes. I could not see that any of the lesions were vesicular. The patient said that they were definitely irritated by exposure to the sun. They are all on exposed areas.

DR. PAUL FOSTER: This patient was presented about three months ago with a diagnosis of lupus erythematosus, and at that time the consensus of this society was that the disease was a familial pemphigus. Dr. Couperus and I discussed the case with Dr. Obermayer, and the biopsy slide was studied at some length, and at that time he was thoroughly convinced that it was a case of familial hereditary pemphigus or possibly an instance of the Senear-Usher syndrome. She was given arsenous acid (asiatic) pills and bismuth sodium para-aminophenylarsonate (arseno-bismulak) by injection. In view of the fact that she seemed to be improving, this type of therapy was continued. Six weeks ago the eruption had completely disappeared. She went on a vacation to San Francisco, and tonight I saw the eruption for the first time in six weeks. I do not believe any one could make any other diagnosis than lupus erythematosus at the present time. The lesions are sharply marginated and show the usual follicular plugs and atrophy. The case was presented the second time at the request of the society.

Multiple Epitheliomas Following Ingestion of Arsenic. Presented by DR. A. FLETCHER HALL.

K. M. J., a woman aged 61, exhibited lesions and scars of former lesions in the left scapular region. One lesion is a round, doughnut-shaped plaque about 1 cm. in diameter. The borders of this lesion are brown, firm and abruptly elevated, while the center is slightly depressed and has a firmly attached scale. Near this lesion is a large irregularly shaped lesion having an elevated, serpiginous, firm, brownish border. The center shows some healing. Below these are two irregular half-dollar-sized dull red squamous plaques which are more recent in appearance. These do not show elevated borders. The patient was taking antisyphilitic treatment in 1928 when the first lesion appeared on her back. A large lesion was excised at the White Memorial Hospital ten years ago, and seven years ago another lesion in the same area was treated with solid carbon dioxide. More lesions appeared nearby soon afterward. The only history of oral ingestion of arsenic is of "drops" taken during adolescence to make the skin clear and smooth. She states that she took the "drops" for only a short time.

DISCUSSION

DR. NELSON PAUL ANDERSON: I think this case is instructive as presenting a beautiful clinical example of multiple superficial epitheliomatosis with a definite arsenical background. It is observed that the patient has no lesions on the palms or soles. This, again, demonstrates that one can have these superficial epitheliomatous lesions without arsenical keratoses.

DR. A. FLETCHER HALL: I realize this is not a particularly unusual case to be presented. I presented it because the patient's only history of ingestion of arsenic by mouth is the taking of drops in her early teens. She was told these drops would make her skin clear and smooth. She says that she did not take more than a total of 2 teaspoons and that must have been forty-five years ago. Since then she has had treatment for syphilis by arsenicals given intravenously. I have not associated arsenical keratoses or arsenical epitheliomas with arsenicals given intravenously but with arsenic taken by mouth. Was this possibly initiated by the arsenic she took forty-five years ago in a total dosage of 2 fluidrachms (7.5 cc.), or does the intravenous treatment have anything to do with this sort of lesion?

A Case for Diagnosis (Acrodermatitis Continua of Hallopeau?). Presented by DR. SAMUEL AYRES JR.

C. C., a man aged 34, who has had a vesicular eruption every summer for five years (between 1935 and 1940), has an eruption limited to the hands and feet. All fingers and toes are involved and especially the dorsal and lateral surfaces of the fingers and big toes. All of the nails are affected. These show a yellowish thickening with dystrophy along the distal edges. The left index finger nail is practically destroyed and discharges a creamy pus. Chronic paronychial changes are present around all finger nails. The distal three fourths of all finger nails show redness, scaling and crusting. There are no interdigital lesions, nor are there any lesions on the soles. The eruption of the fingers and toes has been present for two years. It began on the fingers. The microscopic examination of scrapings from the fingers and toes and from under the finger nails failed to reveal fungi. Debris from beneath the nails was planted on plain agar, plain broth, Rosenow's brain broth and Sabouraud's medium, and the cultures yielded only Staphylococcus albus. The patient received elsewhere approximately fifty roentgen ray treatments; he took 50,000 U. S. P. units of vitamin A daily for one month, and he has used sulfathiazole locally and by mouth. All have been without benefit.

DISCUSSION

DR. NELSON PAUL ANDERSON: I do not believe that this is an acrodermatitis continua. The great majority of eruptions which are so classified affect only one or two nails at a time. When that disease has persisted for any length of time, there occurs a peculiar atrophy with a shiny glazed appearance of the skin. The patient also presents small subepithelial pustular lesions. In this particular case all of the nails are involved. In my opinion this eruption belongs to a group of cases of a disease that has been described by Barbour, by Andrews and by MacKee. I believe that it is a pustular psoriasis involving the nails and that biopsy will substantiate such a diagnosis. I know that in most of the cases discussed in this country as instances of pustular psoriasis the patients have presented lesions on the palms and soles, but there is another group in which the eruption involves only the digits. Technically it is an acrodermatitis, but there is something more to it than just the simple acrodermatitis continua which Hallopeau described.

DR. SAMUEL AYRES JR.: I appreciate Dr. Anderson's suggestion. I think pustular psoriasis is a real possibility in this case. If the disease is proved to be pustular psoriasis, I anticipate that the patient will acquire the deforming type of arthritis. In arthropathic psoriasis changes occur around the nails similar to those exhibited by this patient.

A Case for Diagnosis (Herpes Simplex? Erythema Multiforme?). Presented by DR. PAUL D. FOSTER.

P. M., a woman aged 27, has suffered from a recurrent vesicular eruption on the extremities since she was 13. The lesions began when menstruation began. Attacks begin about one week before menstruation and recur about every second menstrual period. At present there are small vesicles on the fingers, on the tops of the feet and on the lips. Scattered similar lesions are on the legs. Individual lesions vary from 1 to 5 mm. in diameter. The blood count showed 8,560 leukocytes,

3,650,000 erythrocytes and a hemoglobin content of 74 per cent. The fasting blood sugar level was 88.2 mg. per hundred cubic centimeters.

DISCUSSION

DR. A. FLETCHER HALL: I say it should be classified with herpes simplex, although "simplex" is not particularly fitting.

DR. ANKER JENSEN: I believe that many patients who acquire a dermatitis during the menstrual period are helped by autohemotherapy and estrogenic substances. I have often considered the grouping of the various eruptions specifically recurrent at menstruation. This woman's lesions should be included in such a group.

DR. W. H. GOECKERMAN: She was pretty specific about the cyclic appearances. I should classify the lesions as erythema multiforme, which probably includes a multitude of toxic manifestations.

DR. CHIS HALLORAN: From time to time eruptions are seen that are not easy to classify. The individual lesions resemble erythema multiforme. I consider this eruption an erythema multiforme of unusual type.

DR. SAMUEL AYRES JR.: I am rather inclined to agree with Dr. Hall that the eruption may be an unusual type of herpes simplex.

DR. H. P. JACOBSON: I wish to echo the sentiments expressed by Dr. Jensen. The presenting eruption in this case is a cutaneous manifestation of either a toxic or a metabolic disturbance. Whether it should be classed as a herpes simplex or an erythema multiforme, the indication for management of the case calls for thorough study with a view to possibly discovering an underlying systemic factor.

DR. PAUL FOSTER: This patient has an eruption of a sort that I have never seen before. The individual lesions themselves look exactly like the primary lesions of herpes simplex. In this instance, however, they are discrete and distributed over large areas of the body, hands, arms, buttocks and legs. At the time these small flaccid vesiculopustular eruptions occur, she always has a severe herpes simplex of the lips. This occurs every two months and starts one week before her menstrual period. She has had the eruption for the past fourteen years, and no treatment has been of any value whatsoever. It is my opinion that this is a form of disseminated herpes and that a certain amount of immunity to the infection develops. This immunity causes the eruption to skip every other menstrual period. Her treatment has included vaccination with smallpox vaccine, according to the method of Foster and Absher, on two different occasions.

Linear Scleroderma. Presented by DR. NELSON PAUL ANDERSON.

D. M., a white girl aged 11, began to have an eruption about seven years ago; it progressed for about one year and then became stationary. The child is thin but healthy. When she was first seen, in July 1941, there was a poorly defined scarred area present on the left side of the nose. It extended upward from the left naris to a point near the left eye. It had bluish discoloration along the borders and a disfigurement of the naris due to the contracting of the scar tissue. An area of slight pigmentation and loss of hair was present on the left anterior part of the scalp. In May 1943 the picture had changed. The plaque on the left side of the nose was more ivory colored. In the areas of atrophy there are some dilated follicular orifices, which give the appearance of pigskin. A special examination of the nose in February 1943 revealed a deflected septum and a polypoid mass on the right side. Transillumination of the sinuses showed a loss of part of the left nasal triangle. The tonsils are enlarged.

The child has a mother, father and two sisters. None show similar defects. None have tuberculosis. There have been no previous cutaneous defects in the patient.

A blood count in July 1941 showed: erythrocytes, 3,900,000; leukocytes, 7,600; hemoglobin content, 81 per cent; neutrophils, 59 per cent; lymphocytes, 40 per cent, and eosinophils, 1 per cent. A blood count in February 1943 showed 4,700,000 erythrocytes and 82 per cent hemoglobin. A Mantoux test elicited a negative reaction in July 1941. Kline and Wassermann reactions were negative in July 1941. A roentgen examination of the chest in August 1941 revealed nothing significant. Ultraviolet irradiation was given six years ago without benefit. Vitamin A has been used, together with 15 drops of potassium iodide daily.

Book Reviews

Vascular Responses in the Extremities of Man in Health and Disease. By David I. Abramson, M.D. Price, $5. Pp. 412, with 59 illustrations. Chicago. The University of Chicago Press, 1944.

Dr. Abramson has written a monograph to present in a single volume a synthesis of all the pertinent data on the physiologic responses of blood vessels in the extremities. He has gathered together from widely scattered sources most of the important works dealing with the peripheral vascular system of the extremities and has reduced the contents of these works to their common physiologic basis.

The data presented are grouped under seven headings: (1) general anatomy and physiology of the circulation in the extremities; (2) methods applicable to the study of the peripheral circulation; (3) responses of the blood vessels to various physiologic conditions; (4) responses to various pharmacologic agents; (5) abnormalities in the circulation in systemic diseases; (6) peripheral vascular diseases, and (7) therapeutic measures. In each of these categories, Dr. Abramson strives to point out the fundamental physiologic pattern; that is, all of the data are reduced to a rational, functional explanation.

In the first section of the book, Dr. Abramson presents a concise description of some of the accepted concepts of the anatomy and physiology of the peripheral vascular system, together with a discussion of the nervous control of the blood vessels. Unfortunately, the vast scope of material which he attempts to cover in these first few pages makes his discussion appear superficial. However, he does lay down a sufficient background for the physiologic discussions later in the book. The discussion of the various methods available for studying the peripheral circulation is most useful. The method of the venous occlusion plethysmograph is described in great detail, sufficient in fact (as the author points out) "that a beginner should encounter little difficulty in assembling the apparatus and evading the various pitfalls associated with its use."

In the sections dealing with the response of the vascular system to physical and to pharmacologic agents, the author adds to the review of the vast literature much from his own experience in the field. All of the data are presented with the purpose of extending the basic knowledge of the peripheral circulation which was begun in the first section.

In the fifth and sixth sections, various clinical entities are examined and the fundamental physiologic facts presented in the earlier sections are drawn on to give rational explanations of the various diseases. It is this section that is most original, for here there is a meeting of sound physiologic knowledge with clinical experience.

Finally, using the exact descriptions of the various vascular disorders which have been developed in the book, the author concludes with a section devoted to the examination of the therapeutic measures generally employed. His evaluation of these treatments is therefore based on a fundamental understanding of the disease condition and must prove to be of great value to any practitioner.

In general, the book contains much of interest to all persons working in the ever expanding field of peripheral vascular disease. It is of special interest in that it brings together that rare combination, exact physiologic knowledge and clinical experience.

Essentials of Dermatology. By Norman Tobias, M.D. Second edition. Price, 4.75. Pp. 478, with 143 illustrations. Philadelphia: J. B. Lippincott Company, 1943.

This book is a valuable addition to the dermatologic compendiums written for the use of the general practitioner and the medical student. The good glossy paper, the easily readable print and the good illustrations are of great advantage.

Considering that the cause of many cutaneous diseases is unknown, the author's classification is as good as any found in dermatologic textbooks. In this small book he has compressed an enormous amount of dermatologic knowledge. To differential diagnosis and treatment of each disease of the skin much space has been given. The largest chapter is that on syphilis, written in 44 pages.

The reviewer believes that two criticisms are worth mentioning and hopes that in the next edition these may be corrected. The minor objection is to the incorrect use of Greek and Latin words encountered on several occasions: "lymphopathia venereum" instead of "venerea," "verrucae vulgaris" instead of "vulgares," "xeroderma pigmentosa" instead of "pigmentosum" and others. A major objection is to be made against the recommendation of the author to use sulfonamide compounds internally in treatment of dermatitis herpetiformis and pemphigus and in the form of ointments for pyodermic diseases. The use of these highly sensitizing drugs internally or in ointment form should be discouraged rather than encouraged for diseases for which many other harmless drugs are available which are at least as beneficial as the sulfonamide compounds.

In spite of these objections, this dermatologic compendium can be recommended for the use of the general practitioner.

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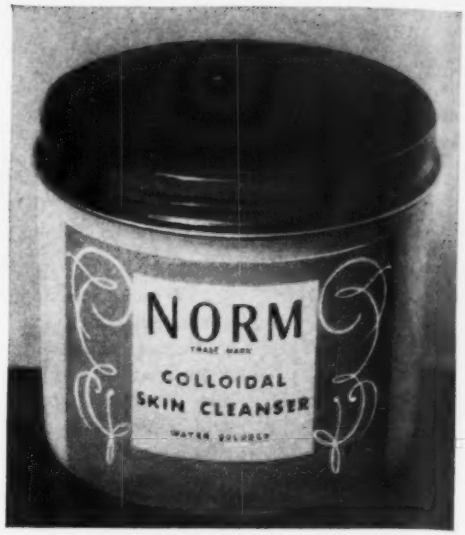

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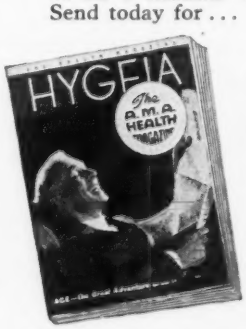

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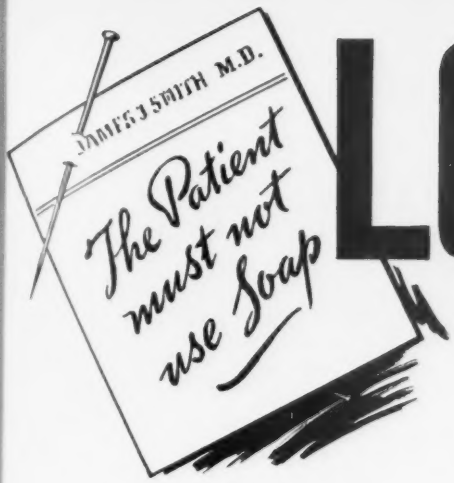

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Westwood Pharmacal Corp.

1020 MAIN ST., BUFFALO 2, N. Y.

Tests Confirm Benefits of Proper Skin Care

DERMATOLOGISTS have long stressed the importance of proper daily cleansing with mild soap and water as a basis for skin health and beauty.

In Camay, we offer a fine toilet soap that fulfills the most rigid requirements for mildness. Repeated skin tests—patch tests, immersion tests, and other skin studies—have adequately demonstrated the mildness of Camay.

With the help of dermatologists, we have developed the details of a proper skin-cleansing routine, called the "Camay Mild-Soap Diet." It is a twice-a-day routine that insures regular, proper cleansing with a truly mild soap.

This method and Camay have recently been subjected to careful clinical tests. Competent dermatologists studied the effects on the skins of over 100 women who changed from their regular cleansing methods to the Camay Mild-Soap Diet. This study showed that the Camay routine was beneficial to the skin in a very high percentage of the cases—that Camay cleanses the skin gently, thoroughly, without irritation.

If you are called upon to recommend a toilet soap for daily use, we believe that you may recommend Camay with confidence. For, in addition to its outstanding mildness, it lathers richly and has a delicate fragrance particularly appealing to women.

Samples of Camay are available for personal or office use and observation. Address your request to Procter and Gamble, Cincinnati, Ohio.

CAMAY

A product of Procter and Gamble